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OCEAN DATA SYSTEMS INC ROCKVILLE MD  
THE CAUSE OF SOUND SPEED PROFILE DIFFERENCES BETWEEN ICAPS AND --ETC(U)  
MAY 80 J H LOCKLIN, B W SCAIFE

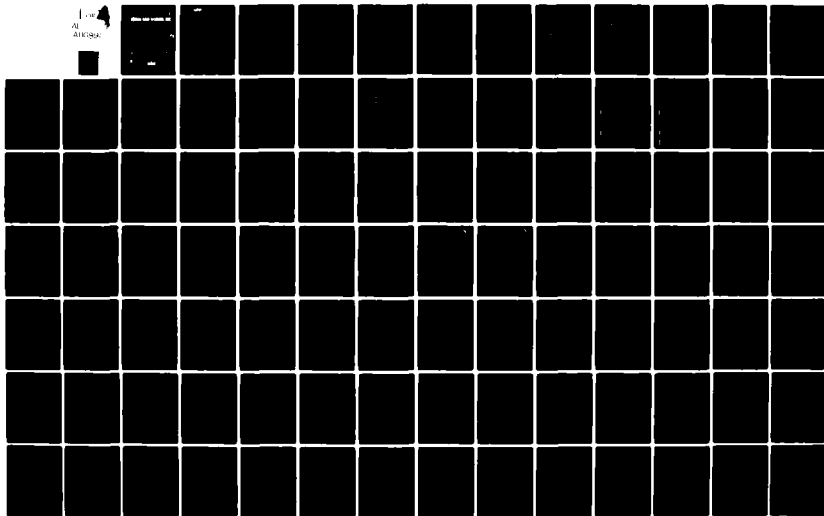
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NSTL Station, Mississippi

Prepared under  
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THE CAUSE OF  
SOUND SPEED PROFILE  
DIFFERENCES BETWEEN  
ICAPS AND SIMAS

FINAL REPORT  
Volume II of II  
May 1, 1980

APPROVED FOR PUBLIC RELEASE  
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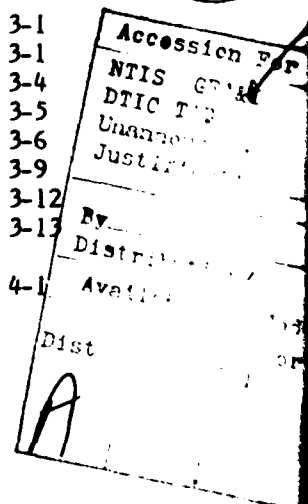
# TABLE OF CONTENTS

## VOLUME I

<u>SECTION</u>		<u>PAGE</u>
	FOREWORD . . . . .	i
	ABSTRACT . . . . .	ii
	TABLE OF CONTENTS . . . . .	iii
	LIST OF FIGURES . . . . .	iv
	LIST OF TABLES . . . . .	iv
1.0	INTRODUCTION . . . . .	1-1
1.1	Background . . . . .	1-1
1.2	Scope . . . . .	1-1
1.3	Objective . . . . .	1-2
1.4	References . . . . .	1-3
2.0	TECHNICAL APPROACH . . . . .	2-1
2.1	General Approach . . . . .	2-1
2.2	Definition and Verification of Input Data . . . . .	2-2
2.3	Isolation of Difference Category . . . . .	2-2
2.3.1	Merge Algorithm . . . . .	2-3
2.3.1.1	ICAPS Merge . . . . .	2-3
2.3.1.2	SIMAS Merge . . . . .	2-4
2.3.2	Historical Profiles . . . . .	2-4
2.3.3	BT Profile Resolution . . . . .	2-5
2.3.4	Salinity Variation . . . . .	2-5
2.4	Tabulation of Results . . . . .	2-6
3.0	RESULTS . . . . .	3-1
3.1	Reconstruction and Verification of Input Data . . . . .	3-1
3.2	Isolation of Cause . . . . .	3-4
3.2.1	Merge Algorithm . . . . .	3-5
3.2.2	Historical Profiles . . . . .	3-6
3.2.3	Bathymograph (BT) Data . . . . .	3-9
3.2.4	Salinity . . . . .	3-12
3.3	Case by Case Discussion . . . . .	3-13
4.0	CONCLUDING REMARKS . . . . .	4-1

## VOLUME II

- APPENDIX A: TASK INPUT DATA  
 B: ICAPS Generated SSP's (CDC Version)  
 C: SIMAS Generated SSP's (CDC Version)  
 D: ICAPS AND SIMAS Sound Speed Profile Generation Methodologies



**APPENDIX A**  
**TASK INPUT DATA**

<b>SECTION</b>	<b>CONTENTS</b>
<b>A1</b>	<b>ICAPS Historical Profile Data</b>
<b>A2</b>	<b>Detailed BT Data for ICAPS</b>
<b>A3</b>	<b>SIMAS Historical Profiles (reference 2)</b>
<b>A4</b>	<b>BT Data for SIMAS</b>
<b>A5</b>	<b>SIMAS Outputs</b>
<b>A6</b>	<b>Sound Speed Profiles (reference 2)</b>
<b>A7</b>	<b>Historical SSP Plots (reference 2)</b>
<b>A8</b>	<b>Generated SSP Plots (reference 2)</b>

APPENDIX A

Section A1

ICAPS Historical Profile Data

① PACA2  
Win

Pac. (c.)

10

xxx ENVIRONMENTAL PROFILE DATA xxx  
LAT 3300N LON 17830W DATE 15 179  
SLDM SLDF IB1 0 IB2  
NO BT INPUT -- HISTORICAL DATA USED

RETRIEVED DATA

DEP (M)	TEMP (C)	SAL PPT
0.	14.98	34.57
10.	14.98	34.57
20.	14.90	34.57
30.	14.87	34.58
50.	14.84	34.58
75.	14.68	34.53
100.	14.39	34.50
125.	13.98	34.47
150.	13.58	34.44
200.	12.73	34.39
250.	11.93	34.33
300.	11.10	34.27
400.	9.39	34.15
500.	7.44	34.05
600.	5.81	34.01
800.	4.18	34.15
1000.	3.45	34.30
1200.	3.07	34.41
1500.	2.62	34.51
2000.	1.95	34.60
2500.	1.66	34.63
3000.	1.56	34.68
4000.	1.50	34.67
5000.	1.55	34.68
5480.	1.57	34.68

xxxxx PROFILE COMPLETED xxxxx

②

PAC A8  
Win

IF

water mass 1

xxx ENVIRONMENTAL PROFILE DATA xxx  
LAT 4200N LON14330W DATE 18 179  
SLDM SLDF 181 0 188  
NO BT INPUT - HISTORICAL DATA USED

RETRIEVED DATA

DEP (M)	TEMP (C)	SAL PPT
0.	5.74	32.71
10.	5.71	32.70
20.	5.70	32.70
30.	5.69	32.70
50.	5.68	32.70
75.	5.61	32.71
100.	5.43	32.78
125.	4.99	33.18
150.	4.76	33.50
200.	4.44	33.75
250.	4.14	33.88
300.	3.96	33.88
400.	3.79	34.00
500.	3.67	34.10
600.	3.53	34.18
800.	3.20	34.30
1000.	2.89	34.38
1200.	2.62	34.44
1500.	2.30	34.51
2000.	1.94	34.58
2500.	1.72	34.63
3000.	1.59	34.65
4000.	1.50	34.67
4750.	1.43	34.68

↑

A1-3

xxxxPROFILE COMPLETEDxxxx



Pac. (f.)

✓/f

(

xxx ENVIRONMENTAL PROFILE DATA xxx  
LAT 4830N LON 14330W DATE 15 179  
SLDM SLDF IB1 0 IB2  
NO BT INPUT - HISTORICAL DATA USED

PAC A8

Win

RETRIEVED DATA

DEP (M)	TEMP (C)	SAL PPT
0.	9.84	33.40
10.	9.83	33.30
20.	9.81	33.30
30.	9.80	33.40
50.	9.82	33.40
75.	9.75	33.43
100.	9.64	33.51
125.	9.42	33.65
150.	9.81	33.82
200.	8.81	33.97
250.	8.81	33.93
300.	7.48	33.97
400.	5.89	33.94
500.	4.82	33.97
600.	4.23	34.04
800.	3.66	34.21
1000.	3.19	34.32
1200.	2.84	34.41
1500.	2.42	34.40
2000.	1.97	34.50
2500.	1.73	34.63
3000.	1.57	34.63
4000.	1.49	34.67
4750.	1.43	34.68

Water Mass 2

xxxxPROFILE COMPLETEDxxxx

2

IF

PAC A8  
SUM

Water mass 1

xxx ENVIRONMENTAL PROFILE DATA xxx  
LAT 4200N LON 14300W DATE 15 779  
SLDM . . . SLDF . . . IB1 0 IB2 2  
NO BT INPUT - HISTORICAL DATA USED

RETRIEVED DATA

DEP (M)	TEMP (C)	SAL PPT
0.	12.79	32.68
10.	18.54	32.68
20.	12.07	32.66
30.	10.61	32.70
50.	7.53	32.79
75.	6.16	32.84
100.	5.64	32.91
125.	5.35	33.21
150.	5.20	33.54
200.	4.80	33.77
250.	4.42	33.83
300.	4.17	33.80
400.	3.92	33.90
500.	3.77	34.00
600.	3.61	34.13
800.	3.23	34.20
1000.	2.90	34.33
1200.	2.63	34.44
1500.	2.29	34.50
2000.	1.93	34.58
2500.	1.72	34.63
3000.	1.58	34.68
4000.	1.51	34.68
4750.	1.46	34.69

xxxxPROFILE COMPLETEDxxxx

IF

2

PAC A8  
SUM

xxx ENVIRONMENTAL PROFILE DATA xxx  
 LAT 4200N LON 14330W DATE 15 779  
 SLDN 6LDF : IB1 0 1B2  
 NO BT INPLT - HISTORICAL DATA USED  
 RETRIEVED DATA

DEP (M)	TEMP (C)	SAL PPT
0.	16.04	33.16
10.	15.78	33.17
20.	14.93	33.20
30.	13.52	33.24
50.	10.35	33.36
75.	9.00	33.44
100.	8.61	33.51
125.	8.46	33.61
150.	8.53	33.79
200.	8.28	33.86
250.	7.60	33.86
300.	6.83	33.85
400.	5.50	33.94
500.	4.65	33.99
600.	4.20	34.07
800.	3.59	34.23
1000.	3.13	34.34
1200.	2.78	34.41
1500.	2.39	34.48
2000.	1.96	34.59
2500.	1.72	34.63
3000.	1.57	34.66
4000.	1.50	34.67
4750.	1.45	34.68

Water Mass 2

↑

xxxxPROFILE COMPLETEDxxxx

2A

www

Water Mass 1

Oct. (a.)

\*\*\* ENVIRONMENTAL PROFILE DATA \*\*\*  
LAT 1300N LON 3800W DATE 15 179  
SLDM . SLDL IB1 0 IB2  
NO BT INPUT - HISTORICAL DATA USED  
RETRIEVED DATA

DEP	TEMP	SAL
(M)	(C)	PPT
0.	25.39	35.91
10.	25.38	35.90
20.	25.37	35.89
30.	25.35	35.89
50.	25.31	35.91
75.	24.62	36.08
100.	21.35	36.22
125.	18.15	36.02
150.	15.74	35.83
200.	13.29	35.58
250.	11.61	35.32
300.	10.61	35.17
400.	9.32	34.98
500.	8.44	34.90
600.	7.54	34.83
800.	6.14	34.73
1000.	5.36	34.77
1200.	4.98	34.86
1500.	4.42	34.96
2000.	3.54	34.97
2500.	3.08	34.94
3000.	2.85	34.92
4000.	2.40	34.89
5000.	2.10	34.86
5000.	1.86	34.84

→

\*\*\*PROFILE COMPLETED\*\*\*

2A

Water Mass 2

xxx ENVIRONMENTAL PROFILE DATA xxx  
LAT 1300N LON 3800W DATE 15 179  
SLDM . SLDF . ID1 0 IB2  
NO BT INPUT - HISTORICAL DATA USED

RETRIEVED DATA

DEP (M)	TEMP (C)	SAL PPT
0.	24.51	36.54
10.	24.51	36.54
20.	24.51	36.55
30.	24.51	36.55
50.	24.45	36.59
75.	24.21	36.72
100.	23.31	36.86
125.	21.33	36.83
150.	19.47	36.68
200.	16.95	36.33
250.	15.22	36.03
300.	13.80	35.80
400.	11.72	35.47
500.	9.95	35.22
600.	8.40	35.01
800.	6.37	34.83
1000.	5.53	34.84
1200.	5.10	34.93
1500.	4.37	34.99
2000.	3.54	34.97
2500.	3.07	34.94
3000.	2.72	34.91
4000.	2.45	34.86
5000.	2.33	34.84
5500.	2.29	34.82

xxxxx PROFILE COMPLETED xxxxx

Att. (e.)

2E Wm

xxx ENVIRONMENTAL PROFILE DATA xxx  
LAT 4730N LON 1730W DATE 15 179  
SLDM , SLDF , IB1 0 IB2  
NO BT INPUT - HISTORICAL DATA USED

RETRIEVED DATA

DEP (M)	TEMP (C)	SAL PPT
0.	12.42	35.70
10.	12.39	35.69
20.	12.38	35.69
30.	12.38	35.69
50.	12.32	35.69
75.	12.30	35.68
100.	12.27	35.68
125.	12.22	35.68
150.	12.16	35.67
200.	12.03	35.66
250.	11.85	35.63
300.	11.66	35.60
400.	11.33	35.57
500.	11.02	35.54
600.	10.62	35.51
800.	9.71	35.52
1000.	8.03	35.53
1200.	7.81	35.50
1500.	5.26	35.14
2000.	3.73	34.09
2500.	3.20	34.07
3000.	2.79	34.04
4000.	2.54	34.03
4620.	2.39	34.02

xxxxPROFILE COMPLETEDxxxx

2E

sum

xxx ENVIRONMENTAL PROFILE DATA xxx  
LAT 4730N LON 1730W DATE 15 779  
SLDM . SLDL : ID1 0 182  
NO BT INPUT - HISTORICAL DATA USED

RETRIEVED DATA

DEP (M)	TEMP (C)	SAL PPT
0.	17.49	35.66
10.	17.16	35.65
20.	16.81	35.65
30.	16.09	35.65
50.	14.36	35.65
75.	13.08	35.65
100.	12.47	35.64
125.	12.21	35.63
150.	12.01	35.62
200.	11.75	35.60
250.	11.59	35.58
300.	11.43	35.57
400.	11.12	35.54
500.	10.80	35.51
600.	10.41	35.49
800.	9.67	35.56
1000.	8.75	35.58
1200.	7.50	35.47
1500.	5.97	35.13
2000.	3.85	34.96
2500.	3.20	34.95
3000.	2.88	34.94
4000.	2.57	34.91
4620.	2.39	34.89

xxxxxPROFILE COMPLETEDxxxxx





24

win

Water Mass 2

xxx ENVIRONMENTAL PROFILE DATA xxx  
LAT 3930N LON 6830W DAT 15 179  
SLDM . SLDF . IB1 0 IB2  
NO BT INPUT - HISTORICAL DATA USED

RETRIEVED DATA

DEP (M)	TEMP (C)	SAL PPT
0.	10.20	34.35
10.	10.21	34.37
20.	10.48	34.47
30.	10.81	34.57
50.	11.41	34.81
75.	12.09	35.08
100.	12.45	35.28
125.	12.48	35.37
150.	12.28	35.42
200.	11.26	35.36
250.	10.02	35.24
300.	8.82	35.14
400.	6.87	35.02
500.	5.69	34.98
600.	5.04	34.97
800.	4.46	34.97
1000.	4.18	34.98
1200.	3.99	34.98
1500.	3.77	34.96
2000.	3.42	34.96
2500.	3.02	34.94
3000.	2.73	34.93



xxxxPROFILE COMPLETEDxxxx

2H

win

Wate Mass 3

xxx ENVIRONMENTAL PROFILE DATA xxx  
LAT 3930N LON 6830W DATE 15 179  
SLDM SLDF IB1 0 IB2  
NO DT IN-UT - HISTORICAL DATA USED

RETRIEVED DATA

DEF	TEMP	SAL
(M)	(C)	PPT
0.	20.54	35.35
10.	20.56	35.35
20.	20.59	35.35
30.	20.60	36.38
50.	20.57	36.39
75.	20.38	36.39
100.	20.13	36.42
125.	19.86	36.43
150.	19.62	36.43
200.	18.76	36.39
250.	17.11	36.21
300.	15.87	36.09
400.	14.28	35.92
500.	13.15	35.78
600.	11.36	35.54
800.	8.14	35.18
1000.	5.76	35.01
1200.	4.57	34.97
1500.	4.07	34.95
2000.	3.70	34.96
2500.	3.39	34.95
3000.	2.97	34.94

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xxxxPROFILE COMPLETEDxxxx

3H

Wm

Watermax 4

xxx ENVIRONMENTAL PROFILE DATA xxx  
LAT 3930N LON 6830W DATE 15 179  
SLDM , SLDF , IB1 0 IB2  
NO BT INPUT - HISTORICAL DATA USED

RETRIEVED DATA

DEP (M)	TEMP (C)	SAL PPT
0.	20.12	36.48
10.	20.13	36.48
20.	20.13	36.48
30.	20.10	36.48
50.	20.00	36.49
75.	19.90	36.50
100.	19.76	36.50
125.	19.61	36.52
150.	19.43	36.53
200.	18.92	36.53
250.	18.49	36.52
300.	18.18	36.50
400.	17.52	36.42
500.	16.58	36.25
600.	15.04	35.99
800.	10.83	35.41
1000.	7.03	35.08
1200.	5.23	35.00
1500.	4.27	34.98
2000.	3.77	34.98
2500.	3.48	34.98
3000.	3.01	34.95

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xxxxPROFILE COMPLETEDxxxx

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3A

xxx ENVIRONMENTAL PROFILE DATA xxx  
LAT 3730N LON 1730E DATE 18 779  
SLDM 0 SLDF 0 IB1 0 IB2 0  
NO BT INPUT - HISTORICAL DATA USED

RETRIEVED DATA

DEP (M)	TEMP (C)	SAL PPT
0.	25.05	38.80
10.	24.46	38.80
20.	22.85	38.83
30.	20.45	38.50
50.	17.46	38.55
75.	16.03	38.65
100.	15.44	38.73
125.	15.20	38.77
150.	15.04	38.81
200.	14.86	38.85
250.	14.68	38.86
300.	14.53	38.86
400.	14.28	38.84
500.	14.09	38.82
600.	13.94	38.79
800.	13.78	38.76
1000.	13.70	38.74
1200.	13.66	38.72
1500.	13.66	38.71
2000.	13.67	38.69
2500.	13.67	38.68
3000.	13.71	38.65

Med 5  
SUM

xxxxPROFILE COMPLETEDxxxx

**APPENDIX A**

**Section A2**

**Detailed BT Data for ICAPS  
(plots reproduced from reference 2)**

33°N  
172.5°W  
FEB

10

02:

d T  
0 17.13  
14 17.23  
58 17.20  
143 17.13  
150 17.00  
156 16.17  
158 16.03  
211 14.85  
253 14.21  
275 13.79  
288 13.40  
345 12.35  
353 12.28  
367 11.93  
401 11.40  
411 11.10  
417 11.08  
426 10.75  
437 10.58  
442 10.39  
449 10.29  
476 9.87

just all

use all

DATE  
0 12.30  
93 12.37  
109 12.32  
117 12.07  
126 11.15  
131 11.01  
134 10.77  
155 10.35  
169 10.31  
177 10.06  
194 9.88  
202 9.66  
220 9.46  
234 9.12  
304 8.27  
387 6.98  
425 6.24  
437 6.08  
445 6.13  
456 5.82  
497 5.43

42°N  
143.5°W  
FEB

IF

(21)

0	14.80
20	14.85
25	14.70
30	14.70
36	11.03
42	10.21
47	10.00
49	9.68
60	9.10
69	8.85
73	8.62
82	8.41
86	8.15
91	8.15
103	7.76
117	7.72
122	7.57
132	7.46
137	7.46
138	7.59
147	7.57
155	7.96
160	8.10
156	8.10
245	7.41
262	7.04
291	6.56
344	5.96
376	5.44
411	5.00
429	4.86
457	4.78

42°N  
143.5°W  
AUG.

IF



N. ATL

FEB

13°N  
38°W  
FEB

H:PR

2A

20 25.62  
26 25.62  
27 25.50  
29 25.45  
48 25.21  
79 24.81  
86 24.55  
90 23.81  
95 23.23  
98 22.33  
105 21.72  
109 21.57  
116 20.61  
119 19.49  
121 19.24  
127 18.99  
133 18.28  
137 17.98  
143 17.68  
146 17.58  
149 17.32  
154 17.07  
158 16.67  
167 16.31  
170 15.86  
175 15.76  
185 15.40  
186 15.25  
197 14.65  
201 14.60  
203 14.29  
209 14.19  
210 14.04  
216 13.69  
224 13.64  
227 13.42  
239 13.33  
242 13.16  
249 13.13  
250 13.01  
262 12.98  
272 12.63  
300 12.15  
305 12.05  
308 11.67  
313 11.62  
317 11.64  
330 11.41  
336 11.16  
338 10.95  
351 10.87  
358 10.53  
360 10.50  
365 10.34  
395 10.32  
401 10.13  
416 10.05  
425 9.84  
451 9.58  
455 9.42

use only the  
highlighted

use all

E:R

0	10.93
2	11.19
8	11.40
268	11.79
325	11.04
372	10.09
399	10.75
425	10.75
473	10.52
493	10.55

47.5°N  
17.5°W  
FEB

2E

(10)

use all

0	19.00
22	19.00
27	18.80
29	17.10
32	16.90
33	16.40
37	15.30
38	14.90
40	14.70
50	14.40
53	14.10
66	13.70
122	13.00
165	12.60
192	12.60
207	12.50
214	12.20
243	12.00
265	12.00
294	11.90
335	11.90
414	11.20

47.5°N  
17.5°W  
AUGUST

2E

0 12.86  
16 13.09  
30 13.09  
35 13.14  
39 13.41  
48 13.58  
70 13.95  
85 13.96  
92 14.11

104 14.11  
118 14.39  
122 14.57  
125 14.99  
128 15.05  
133 14.86  
141 14.05  
144 13.92

145 13.45  
147 13.37  
151 13.50  
168 13.45  
171 13.29  
178 13.54  
196 13.40

198 13.40  
204 13.12  
215 12.81  
221 12.50  
240 12.25  
246 11.95

260 11.73  
263 11.53  
281 11.09  
290 11.14  
294 10.96

302 10.39  
326 10.04  
345 9.20  
354 8.95

393 8.51  
400 8.45  
404 8.22  
414 7.95

424 7.89  
429 7.69  
460 7.37  
477 7.03

505 6.94

39.5°N  
68.5°W  
24 FEB

*use all*

6	26.24
18	25.14
22	21.07
29	19.19
35	17.62
41	15.52
46	15.91
49	15.81
51	15.51
59	15.00
62	14.75
77	14.70
84	14.82
135	14.35
173	14.65
215	14.65
253	14.39
275	14.37
295	14.24
370	14.04
434	14.04
443	13.94

*IND OAD*  
*MED / IND*  
*AUGUST*

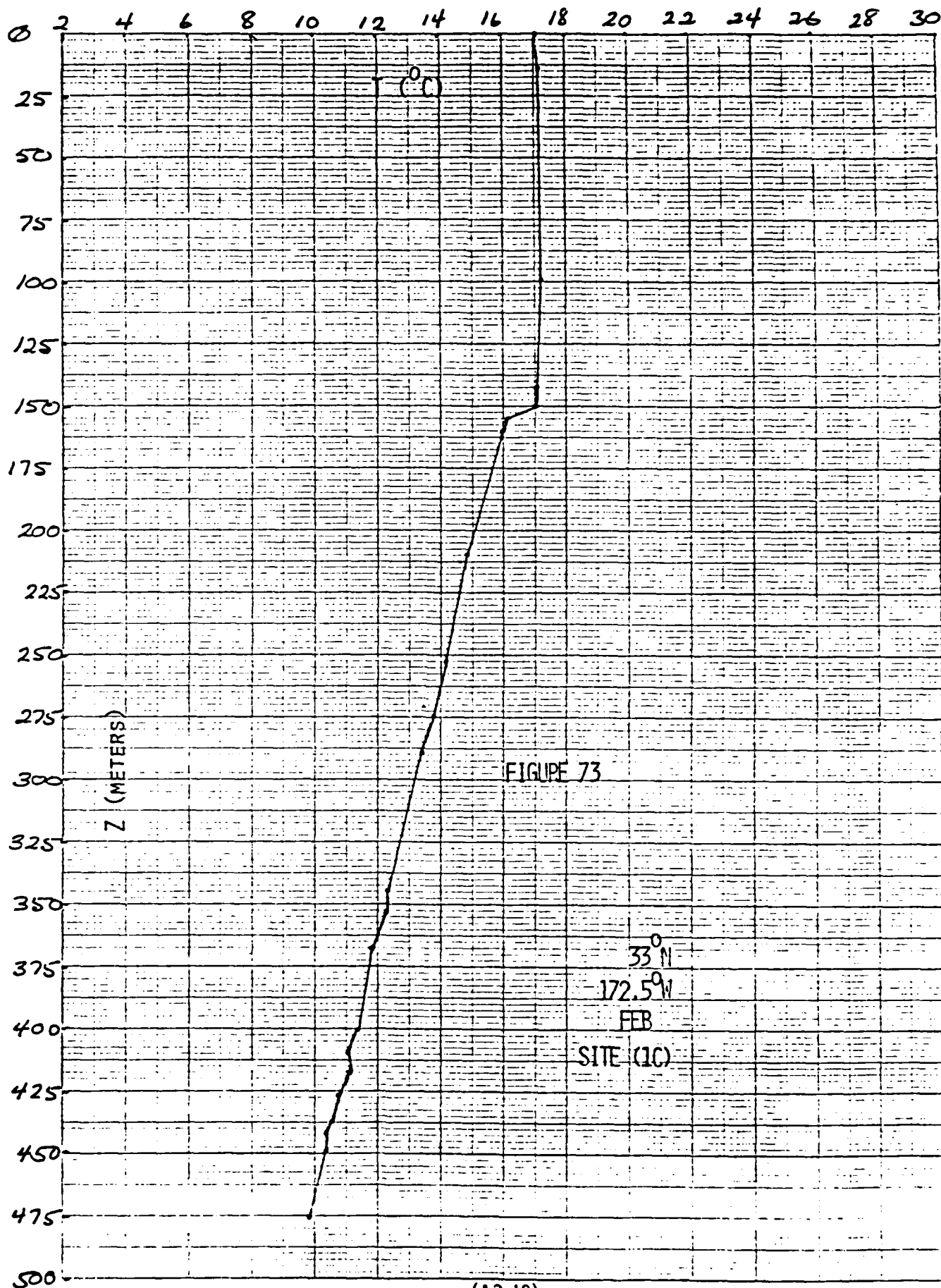
*R*

37.5°N  
17.5°E  
AUG

3A

(22)

14.5 10 X 10 TO 1/2 INCH 46 1322  
REPLACES 1322



(A2-10)











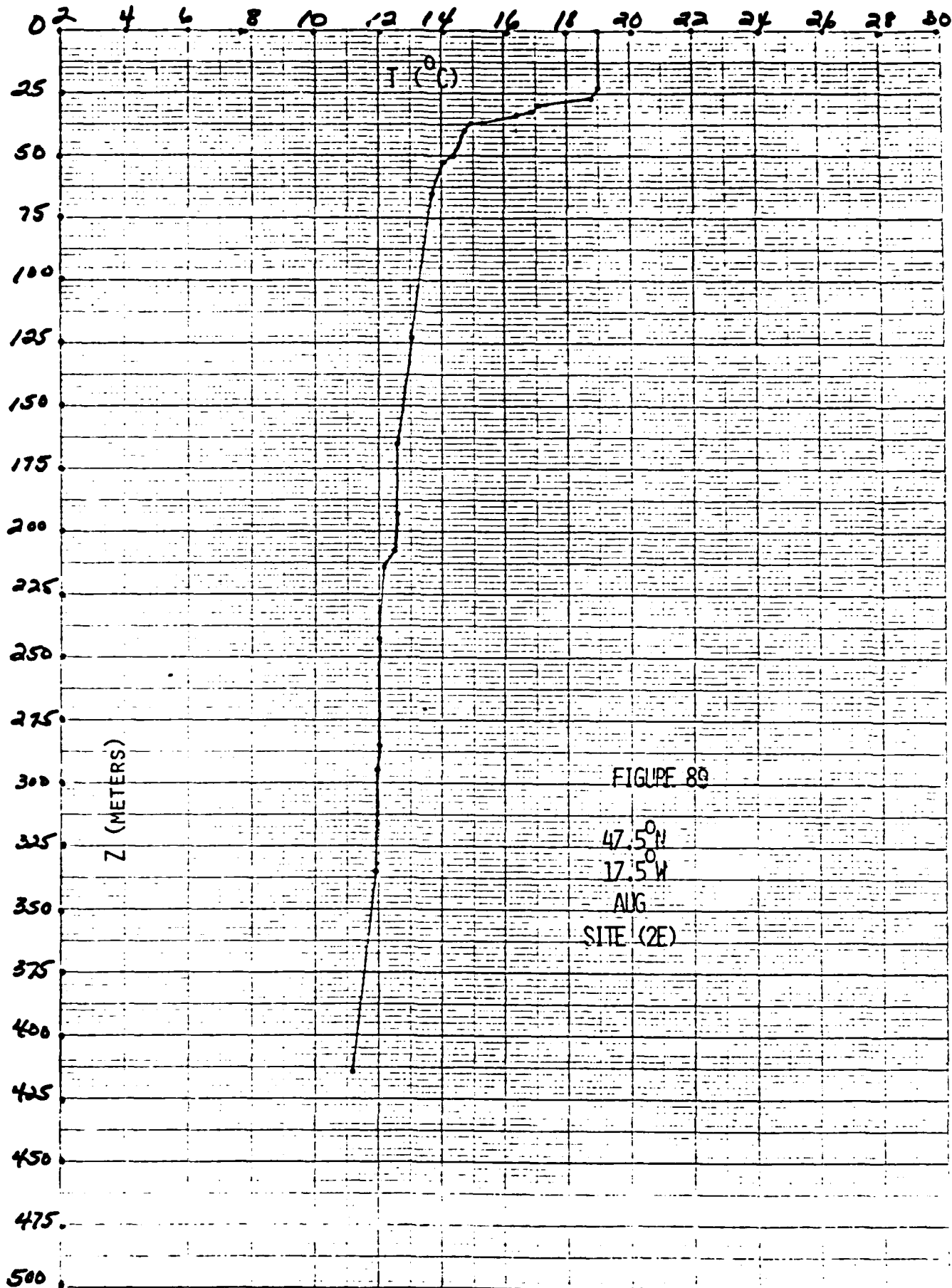


FIGURE 80

47.5°N

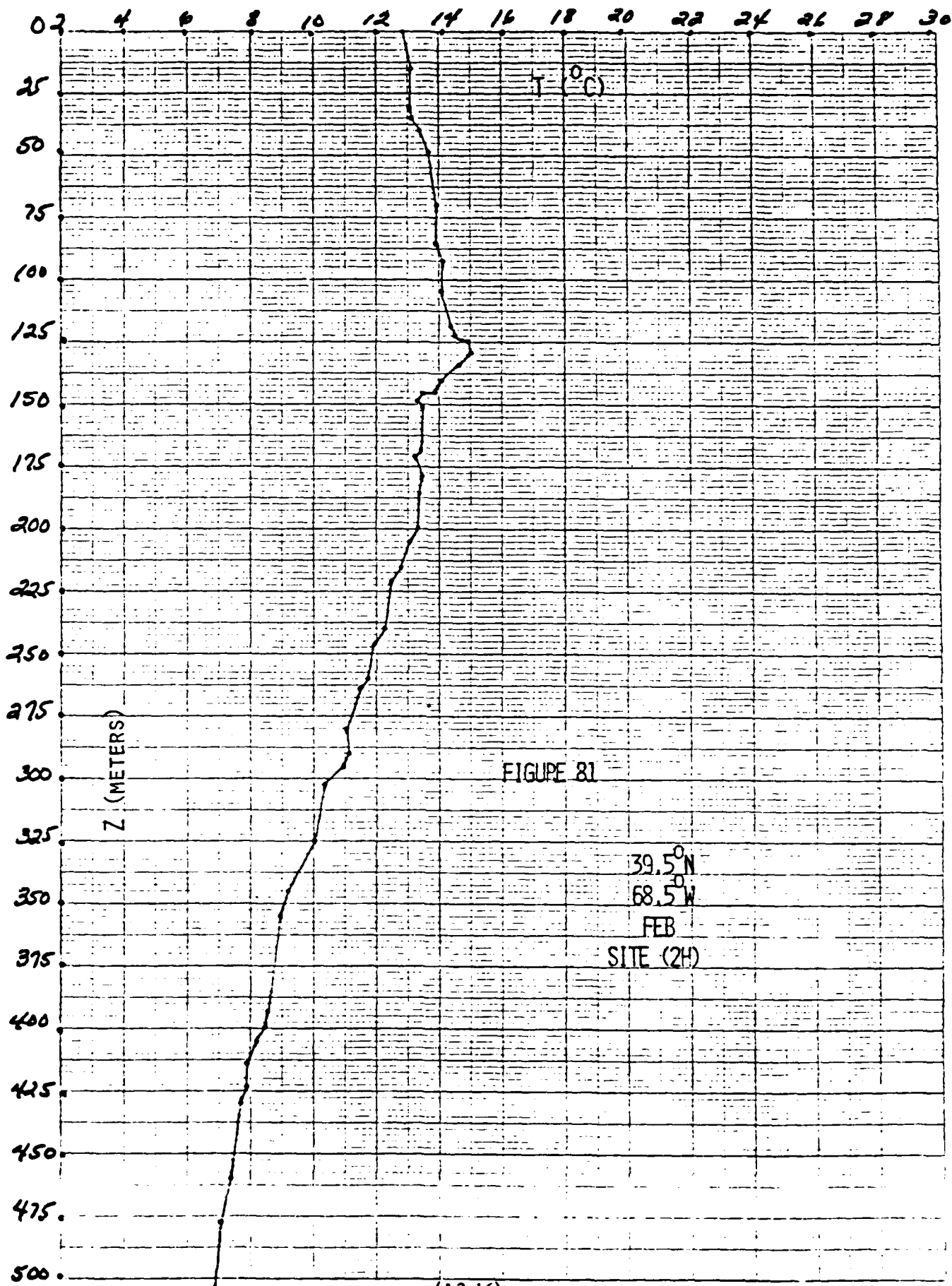
17.5°W

AUG

SITE (2E)

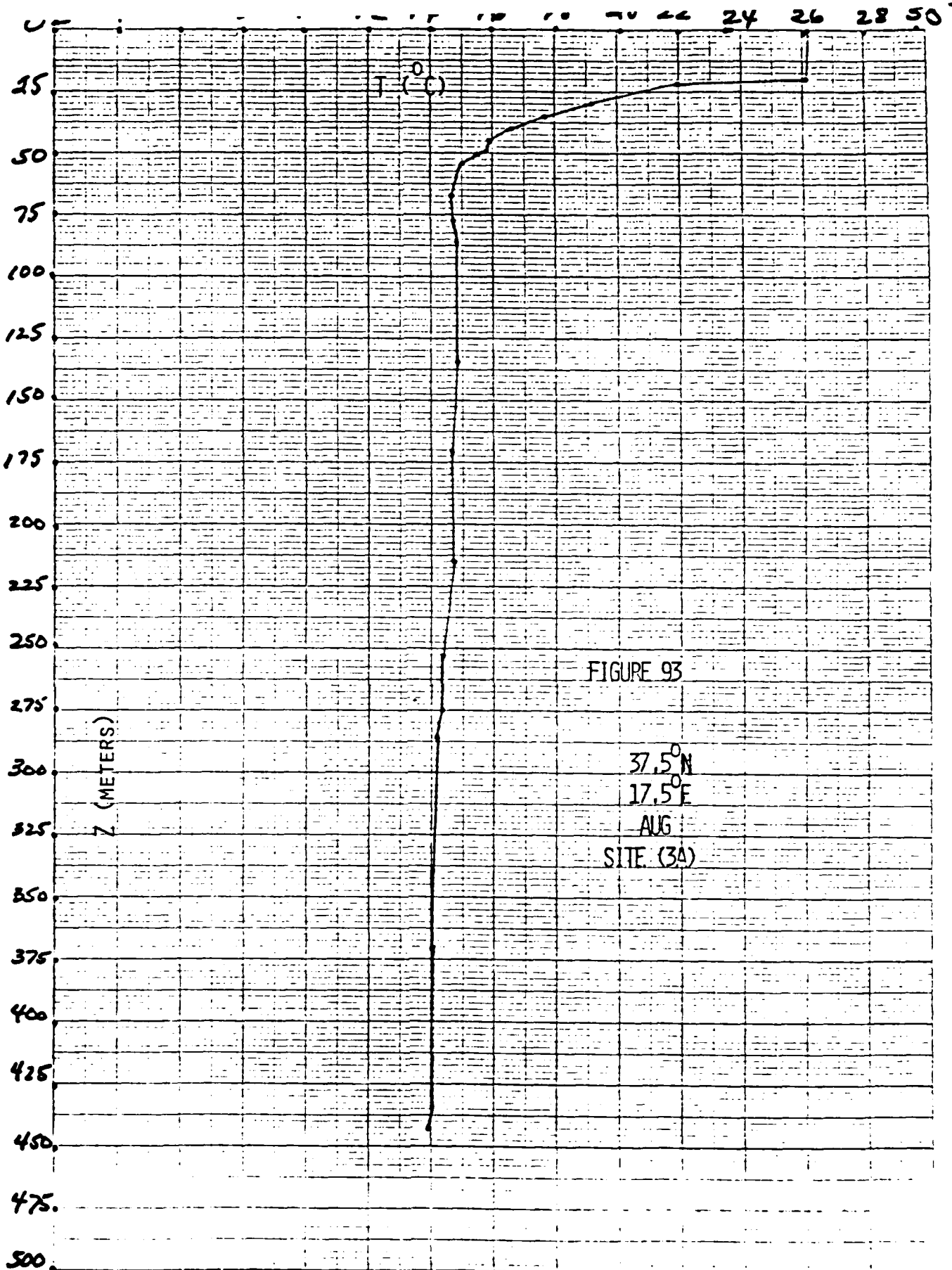
(A2-15)

00



91

100 100 TO 1000 MCH 46 1702  
77  
REMARKS: 1000 MCH



(A2-17)

APPENDIX A

Section A3

SIMAS Historical Profiles (reference 2)

# HISTORICAL SIMAS

24	FEB1C							
0 00	4955 50	250 00	4050 00	300 00	4050 00	500 00	4944 00	
1000 00	4920 00	1250 00	4005 00	1500 00	4090 00	1750 00	4876 00	
2000 00	4880 00	2250 00	4059 00	2500 00	4055 00	2750 00	4854 00	
3000 00	4850 00	3250 00	4057 00	3500 00	4059 00	4000 00	4864 00	
4500 00	4869 00	5000 00	4874 00	6000 00	4085 00	7000 00	4899 00	
0000 00	4930 00	12000 00	4079 00	15000 00	5031 00	10550 00	5095 00	

24	FEB1F						
0 00	4870 00	300 00	4880 50	600 00	4886 00	750 00	4880 00
1000 00	4870 00	1250 00	4850 00	1500 00	4852 00	1750 00	4848 00
2000 00	4840 00	2250 00	4840 00	2500 00	4847 00	2750 00	4849 00
3000 00	4851 00	3250 00	4853 00	3500 00	4855 00	4000 00	4860 00
4500 00	4864 00	5000 00	4871 00	6000 00	4883 00	7000 00	4899 00
0000 00	4930 00	12000 00	4079 00	15000 00	5031 00	15099 00	5049 00

25	AUG1F						
0 00	4884 00	35 00	4884 10	150 00	4916 00	350 00	4889 00
000 00	4885 00	1000 00	4889 00	1250 00	4859 00	1500 00	4852 00
1750 00	4848 00	2000 00	4840 00	2250 00	4846 00	2500 00	4847 00
2750 00	4840 00	3200 00	4851 00	3250 00	4853 00	3500 00	4855 00
4200 00	4800 00	4500 00	4864 00	5000 00	4871 00	6000 00	4883 00
7000 00	4899 00	0000 00	4030 00	12000 00	4079 00	15000 00	5031 00
10000 00	5040 10						

28	FEB2A						
0 00	5024 00	100 00	5025 00	200 00	5010 00	300 00	4952 00
500 00	4920 00	750 00	4920 00	1000 00	4915 00	1250 00	4910 00
1500 00	4905 00	1750 00	4890 00	2000 00	4892 00	2250 00	4886 00
2500 00	4870 00	2750 00	4876 00	3000 00	4877 00	3250 00	4879 00
3500 00	4880 00	4000 00	4885 00	4500 00	4891 00	5000 00	4898 00
6000 00	4900 00	7000 00	4920 00	0000 00	4049 00	12000 00	4095 00
15000 00	5044 00	17032 20	5077 00				

22	FEB2E						
0 00	4911 00	500 00	4910 00	750 00	4922 00	1000 00	4928 00
1250 00	4920 00	1500 00	4926 00	1750 00	4928 00	2000 00	4925 00
2250 00	4923 00	2500 00	4920 00	2750 00	4917 00	3000 00	4914 00
3250 00	4910 00	3500 00	4920 00	4000 00	4902 00	4500 00	4902 00
5000 00	4923 00	6000 00	4909 00	7000 00	4920 00	0000 00	4049 00
12000 00	4995 00	15151 30	5046 50				

23	AUG2E						
0 00	4972 00	100 00	4974 00	250 00	4940 00	500 00	4928 00
1000 00	4927 00	1250 00	4928 00	1500 00	4928 00	1750 00	4926 00
2000 00	4925 00	2250 00	4923 00	2500 00	4920 00	2750 00	4917 00
3000 00	4914 00	3250 00	4910 00	3500 00	4906 00	4000 00	4902 00
4500 00	4902 00	5000 00	4903 00	6000 00	4909 00	7000 00	4920 00
0000 00	4940 00	12000 00	4905 00	15155 40	5046 50		

23	FEB2H						
0 00	4855 00	150 00	4861 00	300 00	4880 00	550 00	4814 00
700 00	4910 00	1000 00	4884 00	1250 00	4868 00	1500 00	4862 00
1750 00	4858 00	2000 00	4856 00	2250 00	4858 00	2500 00	4860 00
2750 00	4802 00	3000 00	4864 00	3250 00	4867 00	3500 00	4870 00
4000 00	4876 00	4500 00	4884 00	5000 00	4891 00	6000 00	4906 00
7000 00	4920 00	0000 00	4040 00	10105 00	4966 00		

12	AUG3C						
0 00	5050 50	30 00	5057 00	50 00	5034 00	100 00	5010 00
200 00	4990 00	350 00	4977 50	000 00	4975 00	1500 00	4977 00
3000 00	4997 00	4200 00	5010 00	7200 00	5066 00	0614 50	5107 00

APPENDIX A  
Section A4  
BT Data for SIMAS



IS BT DATA IN METRIC UNITS? YES OR NO YES

ENTER NEW BT DATA (ESTIMATE TO ONE DECIMAL PLACE) (AN EXTRA (CR) TERMINATES ENTRIES)

DEPTH	TEMP
0.	17.13
98.	17.20
152.	17.
156.	16.17
475.	9.87

OPERATOR INPUT DATA FOR BT

NO.	DEPTH	TEMP
1	0.0	17.1
2	98.0	17.2
3	152.0	17.0
4	156.0	16.2
5	475.0	9.9

DO YOU WISH TO EDIT BT DATA? YES OR NO NO

*Feb 5  
T & O/K*

IS BT DATA IN METRIC UNITS? YES OR NO YES

\*\*\*ENTER NEW BT DATA (ESTIMATE TO ONE DECIMAL PLACE)\*\*\*  
(AN EXTRA (CR) TERMINATES ENTRIES)

	DEPTH	TEMP
***	0.	12.3
***	109.	12.32
***	117.	12.07
***	126.	11.15
***	134.	10.77
***	497.	5.43
***		

OPERATOR INPUT DATA FOR BT

NO.	DEPTH	TEMP
1	0.0	12.3
2	109.0	12.3
3	117.0	12.1
4	126.0	11.1
5	134.0	10.8
6	497.0	5.4

DO YOU WISH TO EDIT BT DATA? YES OR NO NO

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Merge.*

IS RT DATA IN METRIC UNITS? YES OR NO YES

ENTER NEW RT DATA (ESTIMATE TO ONE DECIMAL PLACE)\*\*\*  
(AN EXTRA (CR) TERMINATES ENTRIES)

	DEPTH	TEMP
1111	0.	14.8
1111	30.	14.7
1111	36.	11.03
1111	55.	9.1
1111	113.	7.6
1111	147.	7.57
1111	155.	7.96
1111	196.	8.1
1111	344.	5.98
1111	457.	4.78
1111		

OPERATOR INPUT DATA FOR RT

NO.	DEPTH	TEMP
1	0.0	14.8
2	30.0	14.7
3	36.0	11.0
4	55.0	9.1
5	113.0	7.6
6	147.0	7.6
7	155.0	8.0
8	196.0	8.1
9	344.0	6.0
10	457.0	4.8

DO YOU WISH TO EDIT RT DATA? YES OR NO NO

IS BT DATA IN METRIC UNITS? YES OR NO

YES

ENTER NEW BT DATA (ESTIMATE TO ONE DECIMAL PLACE) (AN EXTRA (CR) TERMINATES ENTRIES)

DEPTH	TEMP
0.	25.61
26	6.6
87.	24.6
98.	22.33
137.	17.98
216.	13.69
345.	10.8
455.	9.42

OPERATOR INPUT DATA FOR BT

NO.	DEPTH	TEMP
1	0.0	25.6
2	26.0	25.6
3	87.0	24.6
4	98.0	22.3
5	137.0	18.0
6	216.0	13.7
7	345.0	10.8
8	455.0	9.4

DO YOU WISH TO EDIT BT DATA? YES OR NO

NO

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IS BT DATA IN METRIC UNITS? YES OR NO YES

ENTER NEU BT DATA (ESTIMATE TO ONE DECIMAL PLACE) (CAN EXTRA (CR) TERMINATES ENTRIES)

	DEPTH C.	TEMP
1111	8.	10.93
2222	372.	11.40
3333	493.	10.99
4444		10.55

OPERATOR INPUT DATA FOR BT

NO.	DEPTH	TEMP
1	0.0	10.9
2	8.0	11.4
3	372.0	11.0
4	493.0	10.6

DO YOU WISH TO EDIT BT DATA? YES OR NO NO

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IS BT DATA IN METRIC UNITS? YES OR NO YES

ENTER NEW BT DATA (ESTIMATE TO ONE DECIMAL PLACE) (M) EXTRA (CR) TERMINATES ENTRIES

DEPTH	TEMP
0.	19.
22.	19.
27.	19.8
29.	17.1
37.	15.3
53.	14.1
122.	13.9
414.	11.4

OPERATOR INPUT DATA FOR BT

NO.	DEPTH	TEMP
1	0.0	19.0
2	22.0	19.0
3	27.0	18.8
4	29.0	17.1
5	37.0	15.3
6	53.0	14.1
7	122.0	13.9
8	414.0	11.4

DO YOU WISH TO EDIT BT DATA? YES OR NO

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 1960  
 1200

IS BT DATA IN METRIC UNITS? YES OR NO YES

ENTER NEW BT DATA (ESTIMATE TO ONE DECIMAL PLACE) (AN EXTRA (CR) TERMINATES ENTRIES)

1117	DEPTH	TEMP
	0.	12.86
1118	35.	13.14
1119	48.	13.68
1120	118.	14.2
1121	133.	14.86
1122	147.	13.37
1123	198.	13.40
1124	221.	12.5
1125	290.	11.14
1126	347.	9.
1127	395.	8.6
1128	407.	7.9
1129	477.	7.03

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\*\*\*\*\* BT DATA \*\*\*\*\*

NO.	DEPTH	TEMP
1	0.0	12.9
2	35.0	13.1
3	45.0	13.7
4	118.0	14.2
5	133.0	14.9
6	147.0	12.4
7	198.0	13.4
8	221.0	12.5
9	290.0	11.1
10	347.0	9.0
11	395.0	8.6
12	407.0	7.9
13	477.0	7.0

TYPES OF CORRECTION

- 1 - DELETE ENTRY
- 2 - CHANGE ENTRY
- 3 - INSERT NEW ENTRY AT LINE INDICATED

\*\*\*\*\* ENTER LINE NOS. 01-25 FOR CHANGES \*\*\*\*\*  
 \*\*\*\*\* ENTER EXTRA (CR) FOR END OF EDIT \*\*\*\*\*

ENTER LINE NUMBER (XX)



Italy

YES

IS BT DATA IN METRIC UNITS? YES OR NO

\*\*\*\*\*ENTER NEW BT DATA (ESTIMATE TO ONE DECIMAL PLACE)\*\*\*\*\*  
(AN EXTRA (CR) TERMINATES ENTRIES)

****	DEPTH	TEMP
****	0.	26.24
****	18.	26.14
****	22.	21.97
****	41.	16.62
****	59.	15.
****	64.	14.7
****	135.	14.85
****	443.	14\4\3.94
****		

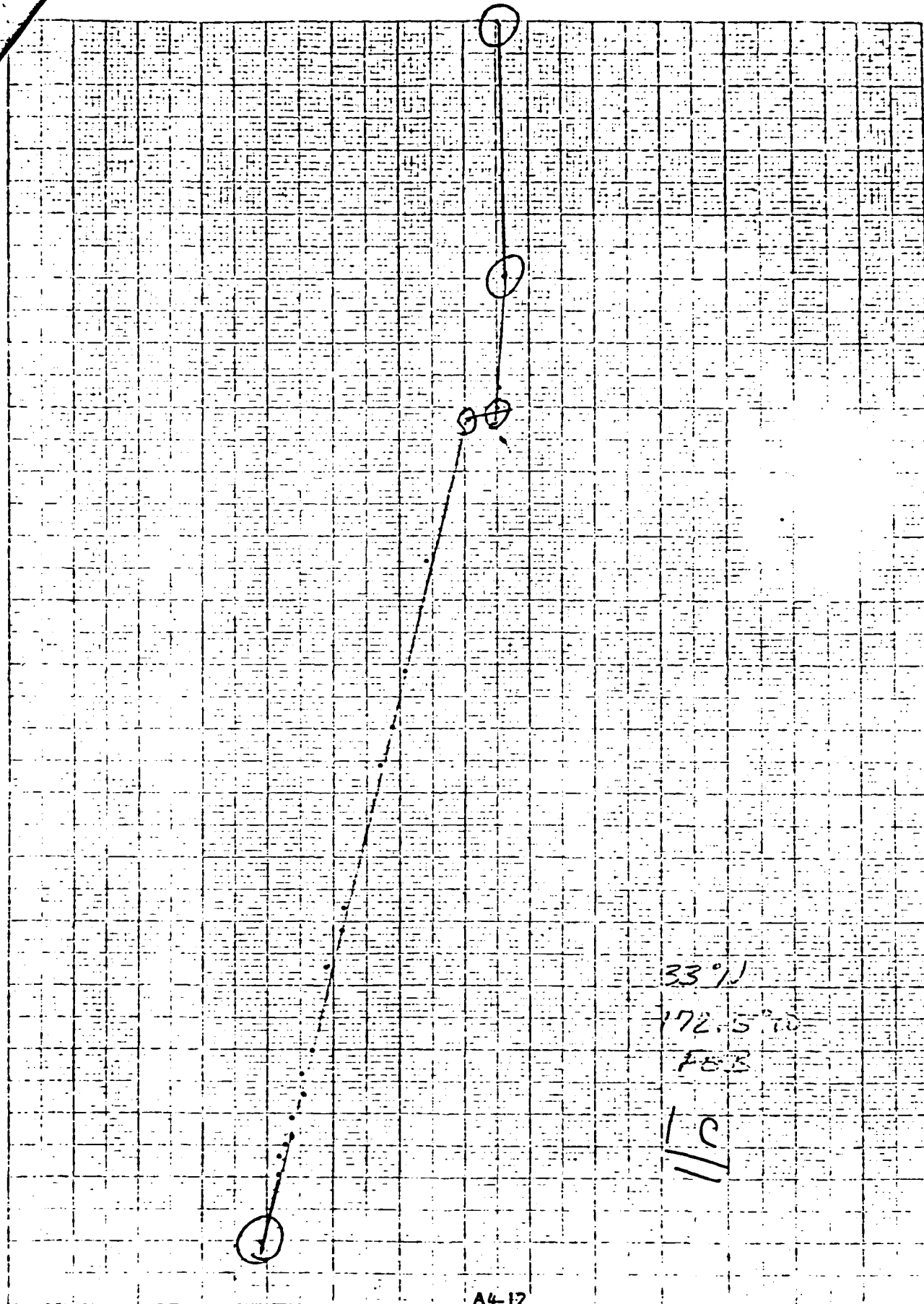
ADJ OK

# OPERATOR INPUT DATA FOR BT

NO.	DEPTH	TEMP
1	0.0	26.2
2	18.0	26.1
3	22.0	22.0
4	41.0	16.6
5	59.0	15.0
6	64.0	14.7
7	135.0	14.9
8	443.0	13.9

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*ADJOCK*

DO YOU WISH TO EDIT BT DATA? YES OR NO

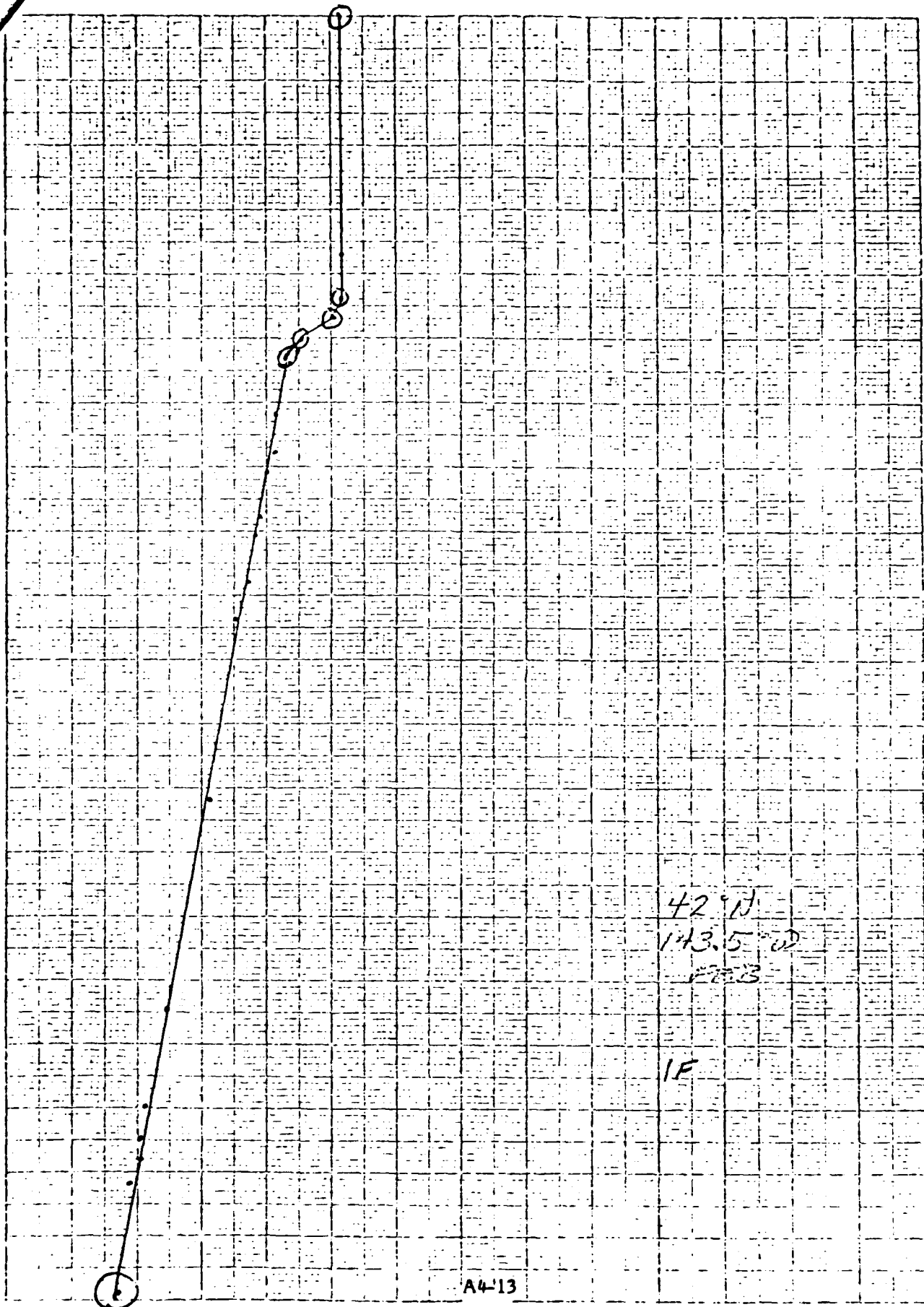


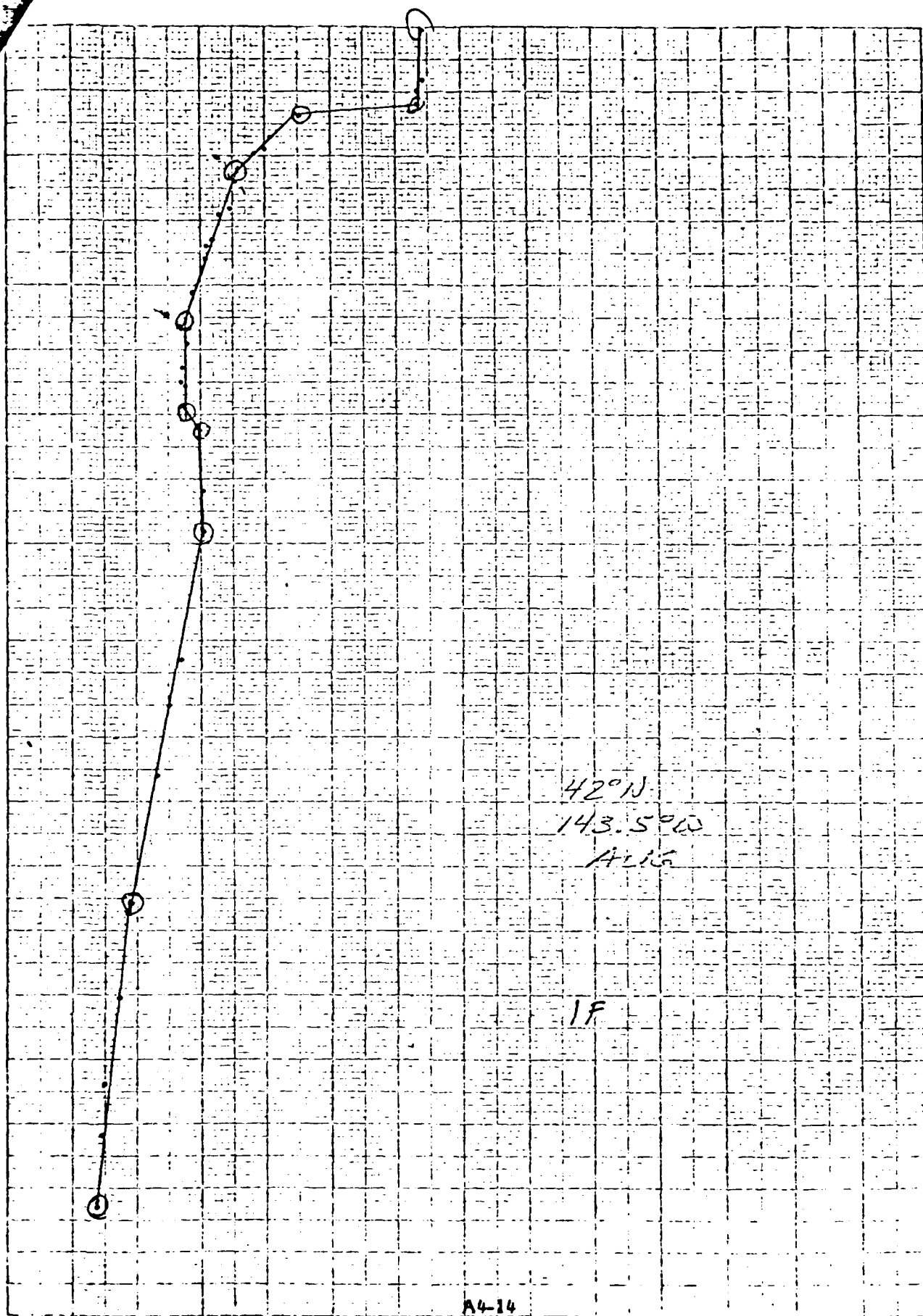
33°J

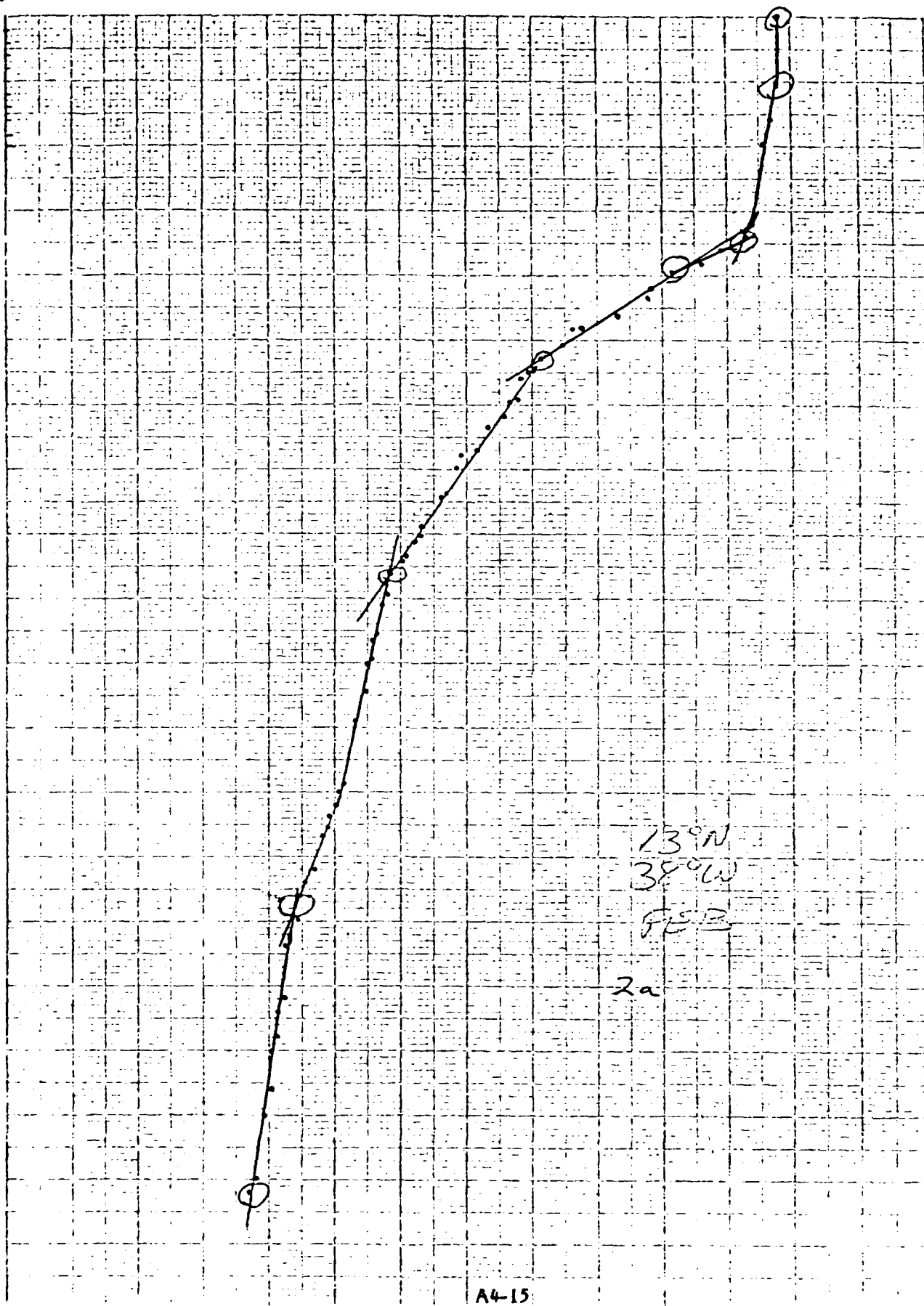
172.5°10

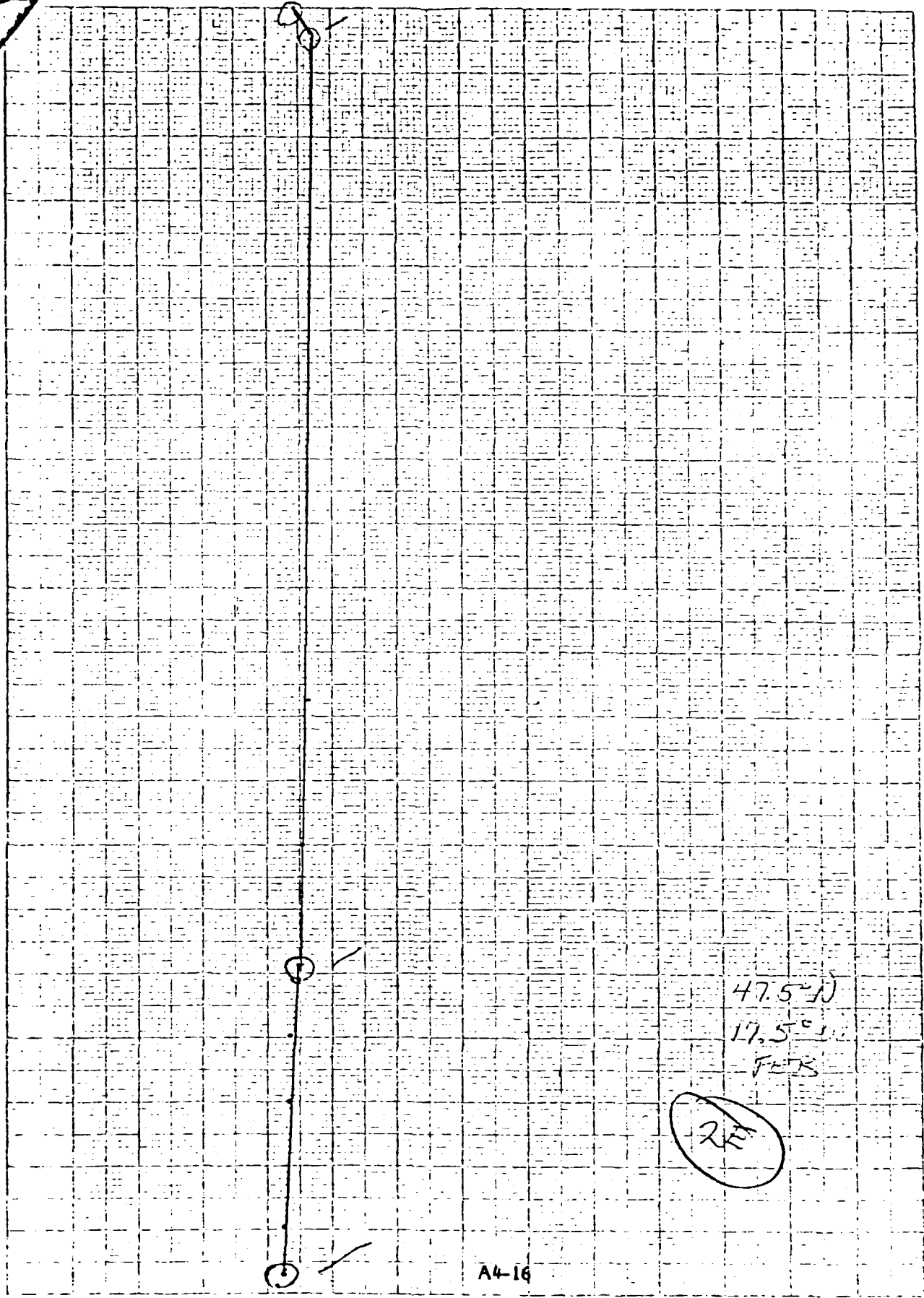
FEB

1/2



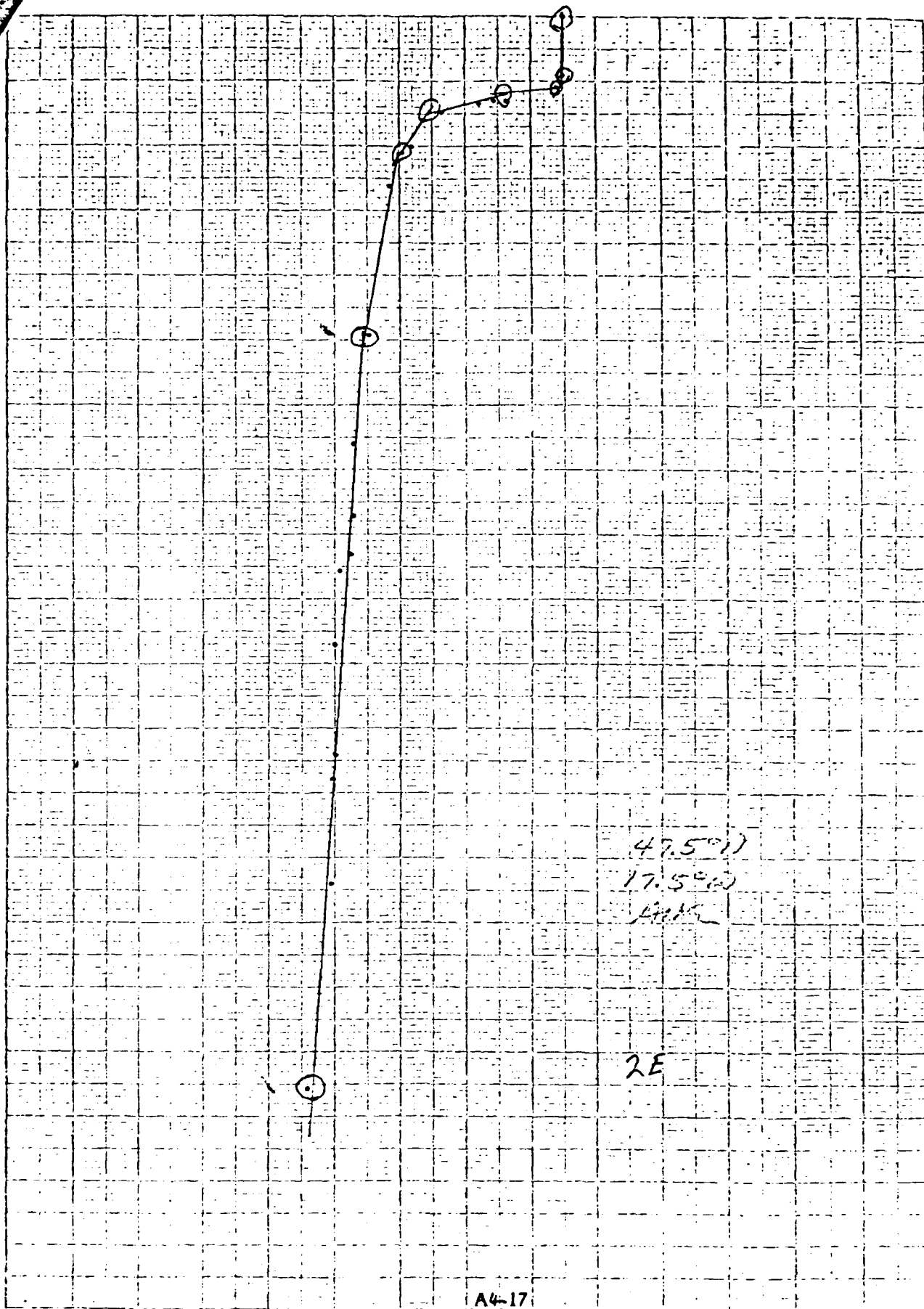




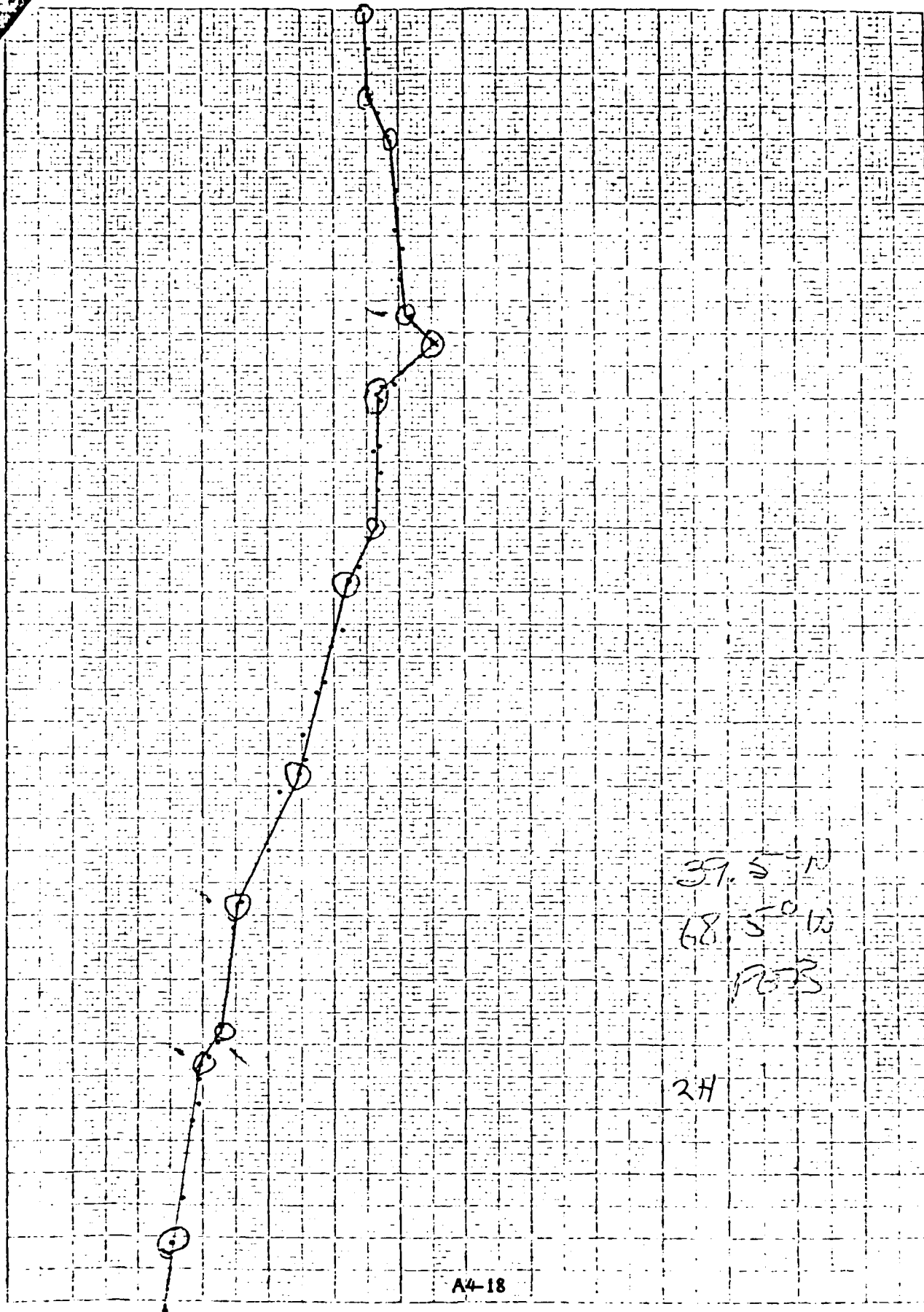


47.5°N  
17.5°E  
FEB

24

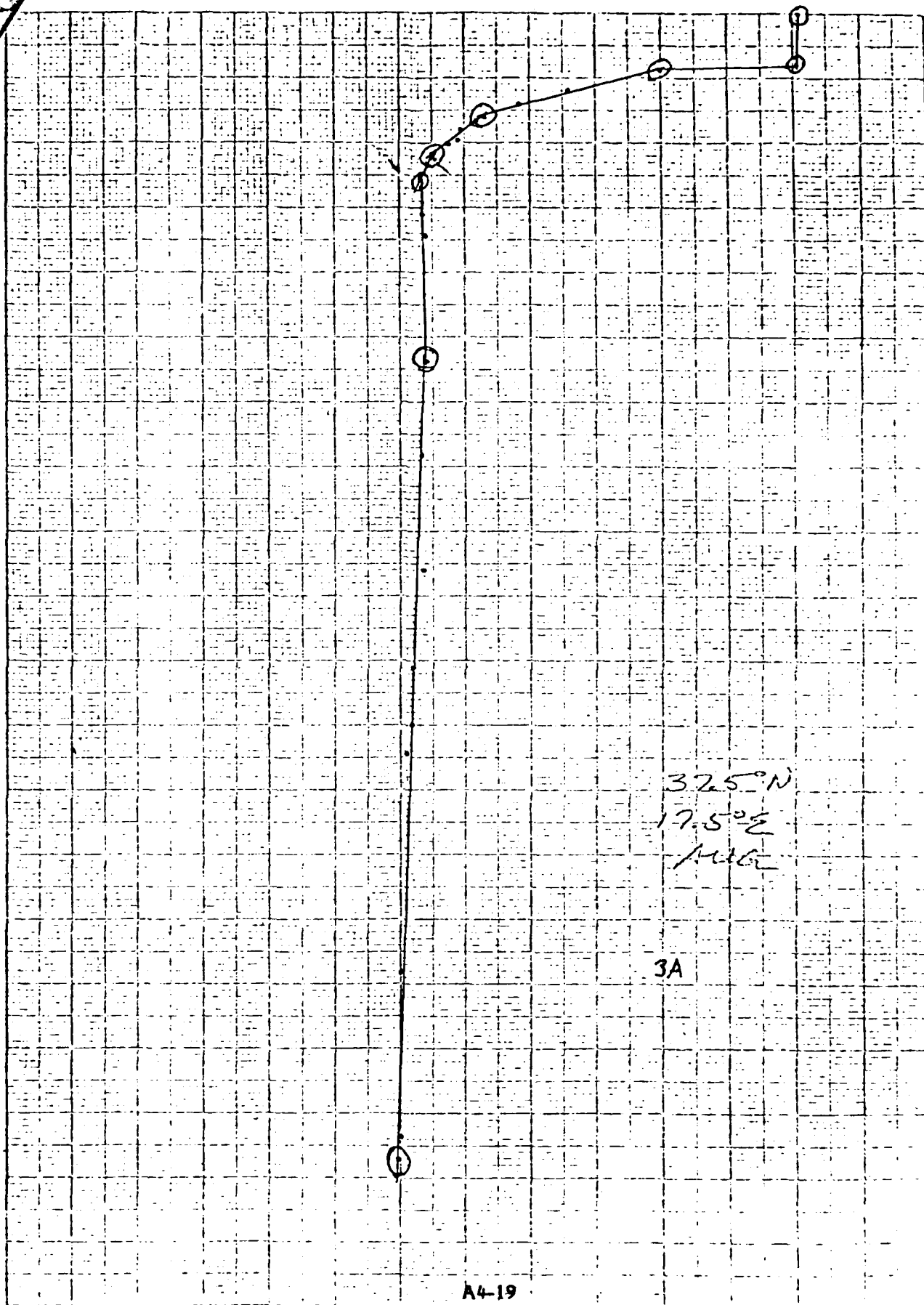






39.5 N  
68.5 W  
P-3

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APPENDIX A

Section A5

SIMAS Outputs

# PROBABLE ERROR IN XBT

## LOCAL DATA

	DEPTH	VEL
1	0.0	4955.5
2	250.0	4958.0
3	300.0	4956.0
4	500.0	4944.0
5	1000.0	4920.0
6	1250.0	4905.0
7	1500.0	4890.0

## XBT DATA

	DEPTH	VEL
1	0.0	4967.1
2	321.5	4973.0
3	498.7	4974.0
4	511.8	4965.9
5	1000.0	4941.7
6	1561.8	4913.8

IS Feb.  
HDI  
OK

## NEW DATA TO BE STORED:

DATE AND TIME OF ENVIRONMENTAL UPDATE 2/15/79 AT 0000

MGS PROVINCE NO. IS 7  
TRUE WIND SPEED IS 19 KNOTS  
CORRECTED BOTTOM DEPTH IS 3093 FATHOMS  
LAYER DEPTH IS 499 FEET  
SOUND VELOCITY AT SURFACE IS 4955.5 FT/SEC

## SOUND VELOCITY PROFILE DATA

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NO.	DEPTH	VELOCITY
1	0.0	4955.5
2	498.7	4963.7
3	500.0	4944.0
4	1000.0	4920.0
5	1250.0	4905.0
6	1500.0	4890.0
7	1750.0	4876.0
8	2000.0	4866.0
9	2250.0	4859.0
10	2500.0	4855.0
11	2750.0	4854.0
12	3000.0	4856.0
13	3250.0	4857.0
14	3500.0	4859.0
15	4000.0	4864.0
16	4500.0	4869.0
17	5000.0	4874.0
18	6000.0	4885.0
19	7000.0	4899.0
20	9000.0	4930.0
21	12000.0	4979.0
22	15000.0	5031.0
23	18557.4	5095.0

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# PROBABLE ERROR IN XBT

## HISTORICAL DATA

	DEPTH	VEL
1	0.0	4876.0
2	300.0	4880.5
3	600.0	4886.0
4	750.0	4880.0
5	1000.0	4870.0
6	1250.0	4859.0
7	1500.0	4852.0

## XBT DATA

	DEPTH	VEL
1	0.0	4916.2
2	357.6	4922.3
3	383.9	4919.9
4	413.4	4909.9
5	439.7	4905.9
6	1000.0	4883.7
7	1630.7	4858.8

IX Feb  
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OK

## NEW DATA TO BE STORED:

DATE AND TIME OF ENVIRONMENTAL UPDATE 2/15/79 AT 0000

MGS PROVINCE NO. IS 7  
TRUE WIND SPEED IS 18 KNOTS  
CORRECTED BOTTOM DEPTH IS 2667 FATHOMS  
LAYER DEPTH IS 358 FEET  
SOUND VELOCITY AT SURFACE IS 4876.0 FT/SEC

## SOUND VELOCITY PROFILE DATA

NO.	DEPTH	VELOCITY
1	0.0	4876.0
2	357.6	4882.1
3	750.0	4880.0
4	1000.0	4870.0
5	1250.0	4859.0
6	1500.0	4852.0
7	1750.0	4848.0
8	2000.0	4846.0
9	2250.0	4846.0
10	2500.0	4847.0
11	2750.0	4849.0
12	3000.0	4851.0
13	3250.0	4853.0
14	3500.0	4855.0
15	4000.0	4860.0
16	4500.0	4864.0
17	5000.0	4871.0
18	6000.0	4883.0
19	7000.0	4899.0
20	9000.0	4930.0
21	12000.0	4979.0
22	15000.0	5031.0
23	15999.6	5049.0

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## NEW DATA TO BE STORED:

DATE AND TIME OF ENVIRONMENTAL UPDATE 8/15/79 AT 0000

NGS PROVINCE NO. IS 7

TRUE WIND SPEED IS 12 KNOTS

CORRECTED BOTTOM DEPTH IS 2667 FATHOMS

LAYER DEPTH IS 98 FEET

SOUND VELOCITY AT SURFACE IS 4949.6 FT/SEC

## SOUND VELOCITY PROFILE DATA

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NO.	DEPTH	VELOCITY
1	0.0	4949.6
2	98.4	4950.2
3	118.1	4909.8
4	180.5	4887.8
5	370.8	4872.3
6	482.3	4873.8
7	508.6	4879.1
8	643.1	4883.1
9	1000.0	4869.0
10	1128.7	4863.9
11	1499.4	4854.1
12	1500.0	4852.0
13	1750.0	4848.0
14	2000.0	4846.0
15	2250.0	4846.0
16	2500.0	4847.0
17	2750.0	4849.0
18	3000.0	4851.0
19	3250.0	4853.0
20	3500.0	4855.0
21	4000.0	4860.0
22	4500.0	4864.0
23	5000.0	4871.0
24	6000.0	4883.0
25	7000.0	4899.0
26	9000.0	4930.0
27	12000.0	4979.0
28	15000.0	5031.0
29	16001.4	5049.0

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0.0	5024.0
100.0	5025.0
200.0	5010.0
300.0	4952.0
500.0	4929.0
750.0	4920.0
1000.0	4915.0
1250.0	4910.0
1500.0	4905.0

1	0.0	5010.0
2	85.3	5041.6
3	285.4	5037.2
4	321.5	5019.5
5	449.5	4982.7
6	708.7	4943.2
7	1000.0	4925.6
8	1131.9	4917.7
9	1492.9	4907.2

IIA Feb

# NEW DATA TO BE STORED:

DATE AND TIME OF ENVIRONMENTAL UPDATE 2/15/79 AT 0000

MGS PROVINCE NO. 15 4  
 TRUE WIND SPEED IS 15 KNOTS  
 CORRECTED BOTTOM DEPTH IS 2839 FATHOMS  
 LAYER DEPTH IS 85 FEET  
 SOUND VELOCITY AT SURFACE IS 5024.0 FT/SEC

## SOUND VELOCITY PROFILE DATA

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NO.	DEPTH	VELOCITY
1	0.0	5024.0
2	85.3	5025.4
3	100.0	5025.0
4	200.0	5010.0
5	300.0	4952.0
6	500.0	4929.0
7	750.0	4920.0
8	1000.0	4915.0
9	1250.0	4910.0
10	1500.0	4905.0
11	1750.0	4899.0
12	2000.0	4892.0
13	2250.0	4886.0
14	2500.0	4879.0
15	2750.0	4876.0
16	3000.0	4877.0
17	3250.0	4879.0
18	3500.0	4880.0
19	4000.0	4885.0
20	4500.0	4891.0
21	5000.0	4898.0
22	6000.0	4909.0
23	7000.0	4920.0
24	9000.0	4949.0
25	12000.0	4995.0
26	15000.0	5044.0
27	17032.3	5077.9

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# ATLANTIC WINTER

## NEW DATA TO BE STORED:

DATE AND TIME OF ENVIRONMENTAL UPDATE 2/15/79 AT 0000

MGS PROVINCE NO. IS 3  
TRUE WIND SPEED IS 21 KNOTS  
CORRECTED BOTTOM DEPTH IS 2525 FATHOMS  
LAYER DEPTH IS 1618 FEET  
SOUND VELOCITY AT SURFACE IS 4907.9 FT/SEC

## SOUND VELOCITY PROFILE DATA

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*✓*  
*John*

NO.	DEPTH	VELOCITY
1	0.0	4907.9 ✓
2	26.2	4913.8 ✓
3	1000.0	4926.0 ✓
4	1220.5	4928.8 ✓
5	1617.5	4930.2 ✓
6	1750.0	4926.0 ✓
7	2000.0	4925.0 ✓
8	2250.0	4923.0 ✓
9	2500.0	4920.0 ✓
10	2750.0	4917.0 ✓
11	3000.0	4914.0 ✓
12	3250.0	4910.0 ✓
13	3500.0	4906.0 ✓
14	4000.0	4902.0 ✓
15	4500.0	4902.0 ✓
16	5000.0	4903.0 ✓
17	6000.0	4903.0 ✓
18	7000.0	4920.0 ✓
19	9000.0	4949.0 ✓
20	12000.0	4995.0 ✓
21	15151.7	5046.5

*The Fels*  
*W. M. M. M.*



NEW DATA TO BE STORED:

DATE AND TIME OF ENVIRONMENTAL UPDATE 8/15/79 AT 0000

MGS PROVINCE NO. IS 3  
TRUE WIND SPEED IS 21 KNOTS  
CORRECTED BOTTOM DEPTH IS 2526 FATHOMS  
LAYER DEPTH IS 72 FEET  
SOUND VELOCITY AT SURFACE IS 4979.0 FT/SEC

SOUND VELOCITY PROFILE DATA

NO.	DEPTH	VELOCITY
1	0.0	4979.0
2	72.2	4980.2
3	88.6	4978.6
4	95.1	4962.4
5	121.4	4944.7
6	173.9	4933.0
7	400.3	4934.5
8	1000.0	4927.0
9	1358.3	4922.5
10	1500.0	4928.0
11	1750.0	4936.0
12	2000.0	4925.0
13	2250.0	4923.0
14	2500.0	4920.0
15	2750.0	4917.0
16	3000.0	4914.0
17	3250.0	4910.0
18	3500.0	4906.0
19	4000.0	4902.0
20	4500.0	4902.0
21	5000.0	4903.0
22	6000.0	4909.0
23	7000.0	4920.0
24	9000.0	4949.0
25	12000.0	4995.0
26	15154.9	5046.5

I.e AUG  
✓  
JAN

II E AUG  
merge

0.0	4855.0
100.0	4861.0
200.0	4880.0
300.0	4914.0
400.0	4910.0
500.0	4884.0
600.0	4868.0
700.0	4862.0

2	114.8	4927.5
3	157.5	4934.1
4	387.2	4943.4
5	436.4	4951.2
6	482.3	4936.0
7	649.6 198	4939.1
8	1000.0 12	4936.0
9	1053.2 131	4925.8
10	951.5 130	4918.7
11	1138.5	4896.2
12	1296.0	4893.9
13	1335.4	4885.8
14	1565.0	4878.6

1st shift  
Logistic

77

This the picture → English  
conversion error (Editor) RWS.

Bad.

shanty 1021

# NEW DATA TO BE STORED:

DATE AND TIME OF ENVIRONMENTAL UPDATE 2/15/79 AT 0000

MCS PROVINCE NO. IS 5  
TRUE WIND SPEED IS 19 KNOTS  
CORRECTED BOTTOM DEPTH IS 1684 FATHOMS  
LAYER DEPTH IS 115 FEET  
SOUND VELOCITY AT SURFACE IS 4861.0 FT/SEC

## SOUND VELOCITY PROFILE DATA

II h FEB

Bad  
Rym  
JH

NO.	DEPTH	VELOCITY
1	0.0	4861.0
2	114.8	4866.0
3	150.0	4861.0
4	300.0	4880.0
5	550.0	4914.0
6	700.0	4910.0
7	1000.0	4884.0
8	1250.0	4868.0
9	1500.0	4862.0
10	1750.0	4858.0
11	2000.0	4856.0
12	2250.0	4858.0
13	2500.0	4860.0
14	2750.0	4862.0
15	3000.0	4864.0
16	3250.0	4867.0
17	3500.0	4870.0
18	4000.0	4876.0
19	4500.0	4884.0
20	5000.0	4891.0
21	6000.0	4906.0
22	7000.0	4920.0
23	9000.0	4949.0
24	10106.1	4966.0

II h FEB  
ADJON

4	100.0	5010.0	4	441.4	5212.7
5	200.0	4990.0	5	635.1	5212.0
6	350.0	4977.5	6	689.0	5200.5
7	600.0	4975.8	7	1000.0	5206.2
8	1000.0	4976.3	8	1453.3	5214.4
9	1500.0	4977.0	9	4768.9	5263.4

*BB*

# PROBABLE ERROR IN NBT

## HISTORICAL DATA

## NBT DATA

	DEPTH	VEL		DEPTH	VEL
1	0.0	5056.5	1	0.0	5055.9
2	30.0	5057.0	2	59.1	5056.1
3	50.0	5034.0	3	72.2	5023.8
4	100.0	5010.0	4	134.5	4976.2
5	200.0	4990.0	5	193.6	4960.8
6	350.0	4977.5	6	210.0	4957.9
7	600.0	4975.8	7	442.9	4963.3
8	1000.0	4976.3	8	1000.0	4967.3
9	1500.0	4977.0	9	1453.5	4970.4

*III a Aug 15*

## NEW DATA TO BE STORED:

DATE AND TIME OF ENVIRONMENTAL UPDATE 8/15/79 AT 0000

MGS PROVINCE NO. IS 5  
 TRUE WIND SPEED IS 7 KNOTS  
 CORRECTED BOTTOM DEPTH IS 1602 FATHOMS  
 LAYER DEPTH IS 59 FEET  
 SOUND VELOCITY AT SURFACE IS 5056.5 FT/SEC

## SOUND VELOCITY PROFILE DATA

*II a AUG 15*

NO.	DEPTH	VELOCITY
1	0.0	5056.5✓
2	59.1✓	5057.5✓
3	100.0	5010.0✓
4	200.0	4990.0✓
5	350.0	4977.5
6	600.0	4975.8
7	1000.0	4976.3
8	1500.0	4977.0
9	3000.0	4997.0
10	4200.0	5016.0
11	7200.0	5066.0
12	9614.7	5107.0

*III a Aug 15  
 ADJ OK*

## APPENDIX A

### Section A6

Sound Speed Profiles (reference 2)

*Historical ICAPS*

XBT's merged with historical ICAPS

XBT's merged with historical SIMAS

# HISTORICAL ICAPS

25	JFIC 1						
0 00	4942 89	32 81	4943 41	65 62	4943 74	98 42	4943 93
104 04	4944 69	246 00	4944 23	328 08	4942 39	410 10	4939 25
492 12	4930 13	656 10	4929 30	820 20	4922 74	984 24	4915 66
1312 32	4900 20	1040 40	4880 01	1968 48	4864 06	2624 64	4854 43
3200 00	4855 01	3930 00	4862 05	4921 20	4872 68	6561 60	4891 28
8202 00	4915 29	9842 40	4942 30	13123 20	4998 09	16404 00	5050 07
17078 79	5006 82						

24	JFIF 1						
0 00	4881 01	32 81	4881 40	65 62	4881 70	98 42	4882 13
104 04	4883 44	246 00	4884 03	328 08	4884 42	410 10	4883 70
492 12	4803 18	656 10	4881 00	820 20	4870 88	984 24	4870 32
1312 32	4854 09	1040 40	4840 10	1968 48	4843 77	2624 64	4847 51
3200 00	4852 37	3930 00	4850 00	4921 20	4869 72	6561 60	4891 54
8202 00	4910 31	9842 40	4942 46	13123 20	4998 76	15583 80	5041 67
24	JFIF 2						
0 00	4820 05	32 81	4820 12	65 62	4826 55	98 42	4820 04
104 04	4827 00	246 00	4820 32	328 08	4827 57	410 10	4824 71
492 12	4824 35	656 10	4823 76	820 20	4822 64	984 24	4823 10
1312 32	4820 08	1040 40	4830 00	1968 48	4834 72	2624 64	4841 51
3200 00	4840 43	3930 00	4855 01	4921 20	4868 12	6561 60	4891 05
8202 00	4910 15	9842 40	4942 00	13123 20	4998 09	15583 80	5041 74

24	JAIF 1						
0 00	4948 70	32 81	4948 09	65 62	4938 55	98 42	4924 15
104 04	4080 04	246 00	4874 07	328 08	4871 79	410 10	4871 09
492 12	4874 08	656 10	4874 97	820 20	4869 10	984 24	4861 85
1312 32	4849 71	1040 40	4843 87	1968 48	4843 40	2624 64	4840 63
3200 00	4851 01	3930 00	4857 95	4921 20	4869 30	6561 60	4891 30
8202 00	4910 15	9842 40	4942 46	13123 20	4998 09	15583 80	5041 93
24	JAIF 2						
0 00	4912 11	32 81	4929 05	65 62	4905 09	98 42	4888 08
104 04	4852 43	246 00	4836 20	328 08	4830 95	410 10	4829 70
492 12	4830 40	656 10	4828 75	820 20	4826 52	984 24	4826 02
1312 32	4828 45	1040 40	4832 22	1968 48	4835 03	2624 64	4841 87
3200 00	4848 56	3930 00	4855 08	4921 20	4867 92	6561 60	4890 92
8202 00	4910 15	9842 40	4942 50	13123 20	4998 09	15583 80	5042 13

25	JF2A(1)						
0 00	5037 34	32 81	5037 00	65 62	5038 40	98 42	5030 08
104 04	5039 77	246 00	5039 70	328 08	5034 42	410 10	5010 20
492 12	5003 01	656 10	4981 17	820 20	4905 29	984 24	4952 14
1312 32	4933 18	1040 40	4910 07	1968 48	4902 53	2624 64	4880 75
3200 00	4880 02	3930 00	4892 20	4921 20	4899 09	6561 60	4915 29
8202 00	4930 02	9842 40	4950 01	13123 20	5013 09	10404 00	5070 02
19028 04	5110 24						
25	JF2A(2)						
0 00	5041 77	32 81	5042 20	65 62	5042 05	98 42	5043 02
104 04	5043 07	246 00	5040 55	328 08	5015 09	410 10	4987 47
492 12	4904 44	656 10	4940 33	820 20	4923 20	984 24	4913 72
1312 32	4902 00	1040 40	4807 15	1968 48	4890 05	2624 64	4883 30
3200 00	4884 00	3930 00	4801 18	4921 20	4899 04	6501 60	4915 29
8202 00	4930 40	9842 40	4901 08	13123 20	5012 54	10404 00	5000 50
19028 04	(5110 47)						

24	JF2E 1							
0 00	4020 51	32 01	4020 08	65 62	4021 10	98 42	4021 43	
104 04	4022 05	240 00	4023 10	320 00	4024 12	410 10	4024 01	
402 12	4025 53	650 10	4020 71	820 20	4027 23	984 24	4027 03	
1312 32	4020 14	1040 40	4030 01	1060 40	4031 43	2624 64	4031 50	
3200 00	4032 50	3030 00	4027 37	4021 20	4011 75	6501 00	4010 02	
8202 00	4038 55	9842 40	4000 03	13123 20	5014 04	15157 30	5040 53	

24	JA2E 1						
0 00	4973 04	32 01	4070 31	65 62	4067 43	98 42	4960 00
104 04	4944 07	240 00	4931 03	320 00	4026 19	410 10	4924 58
402 12	4923 03	650 10	4923 30	820 20	4924 09	984 24	4924 08
1312 32	4020 58	1040 40	4020 12	1060 40	4028 08	2624 64	4931 21
3200 00	4930 08	3030 00	4925 02	4921 20	4909 16	6561 60	4916 77
8202 00	4938 40	9842 40	4901 01	13123 20	5014 06	15013 46	5040 39

22	JF2H 1						
0 00	4791 51	32 01	4793 12	65 62	4795 15	98 42	4798 27
104 04	4807 00	240 00	4822 01	320 00	4839 74	410 10	4852 53
402 12	4859 75	650 10	4805 43	820 20	4863 49	984 24	4860 41
1312 32	4851 02	1040 40	4850 11	1060 40	4852 03	2624 64	4859 36
3200 00	4867 10	3030 00	4875 73	4021 20	4809 74	6561 60	4913 43
8202 00	4930 91	9842 40	4958 21				

22	JF2H 2						
0 00	4800 31	32 01	4890 00	65 62	4894 20	98 42	4899 05
104 04	4808 08	240 00	4910 20	320 00	4924 30	410 10	4925 20
402 12	4925 02	650 10	4916 67	820 20	4904 34	984 24	4892 10
1312 32	4872 41	1040 40	4862 21	1060 40	4858 00	2624 64	4861 91
3200 00	4808 04	3030 00	4877 27	4921 20	4890 09	6561 60	4913 55
8202 00	4935 00	9842 40	4900 04				

22	JF2H 3						
0 00	5033 78	32 01	5004 50	65 62	5005 32	98 42	5005 08
104 04	5030 09	240 00	5006 57	320 00	5005 01	410 10	5004 79
402 12	5033 07	650 10	4998 00	820 20	4984 05	984 24	4974 00
1312 32	4963 13	1040 40	4955 70	1060 40	4940 13	2624 64	4910 05
3200 00	4800 43	3030 00	4885 24	4921 20	4894 02	6561 60	4917 46
8202 00	4941 00	9842 40	4963 42				

22	JF2H 4						
0 00	5000 50	32 01	5001 10	65 62	5001 74	98 42	5002 00
104 04	5002 23	240 00	5002 73	320 00	5002 02	410 10	5002 00
402 12	5002 00	650 10	5000 70	820 20	4999 35	984 24	4999 05
1312 32	4997 04	1040 40	4993 41	1060 40	4982 10	2624 64	4944 26
3200 00	4907 00	3030 00	4894 27	4921 20	4897 00	6561 00	4910 41
8202 00	4941 54	9842 40	4904 05				

22	JA3A 1						
0 00	5040 41	32 01	5015 40	65 62	5033 04	98 42	5013 13
104 04	4980 00	240 00	4974 00	320 00	4970 30	410 10	4969 49
402 12	4969 30	650 10	4970 20	820 20	4971 23	984 24	4972 30
1312 32	4975 07	1040 40	4978 42	1060 40	4982 09	2624 64	4991 11
3200 00	5001 05	3030 00	5011 42	4921 20	5027 76	6561 60	5055 25
8202 00	5002 04	9842 40	5110 06				

# XBT's MERGED WITH HISTORICAL ICAPS

33	IFIC 1							
0 00	4904 03	45 03	4908 21	321 52	4970 74	489 15	4972 12	
492 12	4971 49	511 80	4963 82	518 37	4981 91	692 25	4953 22	
830 04	4947 87	902 22	4944 08	944 87	4940 95	1131 88	4932 08	
1150 12	4931 90	1204 05	4928 12	1315 60	4924 05	1348 41	4921 00	
1308 00	4921 38	1397 82	4918 31	1433 71	4916 51	1450 11	4914 31	
1473 08	4914 77	1561 66	4910 14	1968 48	4886 59	2624 04	4870 21	
3280 00	4807 13	3930 96	4809 95	4921 20	4877 34	6561 00	4893 21	
8202 00	4916 08	9842 40	4942 02	13123 20	4908 95	16404 00	5058 04	
17978 70	5086 71							
32	IFIF 1							
0 00	4909 88	305 11	4916 15	357 61	4916 18	383 85	4914 54	
413 30	4933 75	429 78	4902 99	439 63	4920 89	508 52	4897 04	
554 40	4897 58	580 70	4895 74	636 48	4894 46	662 72	4892 56	
721 78	4891 11	767 71	4887 01	997 36	4880 85	1269 07	4868 71	
1394 34	4860 38	1433 71	4859 72	1459 96	4860 14	1496 04	4856 00	
1030 50	4854 14	1968 48	4850 37	2624 64	4852 20	3280 80	4855 65	
3930 96	4861 13	4921 20	4871 18	6561 60	4892 10	8202 00	4916 54	
9842 40	4942 56	13123 20	4998 76	15583 80	5043 11	16404 00	5058 04	
38	IAIF 1							
0 00	4935 93	65 82	4938 23	82 82	4936 46	98 42	4936 82	
118 11	4698 17	137 79	4887 21	154 20	4885 21	160 76	4881 77	
190 05	4875 20	220 38	4873 37	239 50	4869 92	269 03	4868 02	
282 15	4805 75	298 55	4866 08	337 92	4861 85	433 07	4860 21	
449 47	4800 50	452 75	4861 98	482 28	4862 73	590 54	4871 36	
643 24	4872 45	803 80	4886 28	859 57	4862 05	954 71	4858 41	
1128 00	4853 35	1348 41	4843 81	1407 46	4843 28	1499 33	4843 51	
1968 48	4841 82	2624 64	4844 89	3280 80	4850 37	3936 96	4857 09	
4921 20	4868 80	6561 60	4891 18	8202 00	4916 08	9842 40	4942 43	
13123 20	4998 89	15583 80	5043 34					
27	IF2A 1							
0 00	5043 57	85 30	5044 89	88 58	5044 23	127 95	5044 89	
250 18	5042 59	311 68	5031 11	344 48	5018 97	390 42	4999 94	
485 50	4982 88	574 14	4966 15	659 44	4954 66	734 00	4944 82	
820 23	4938 91	1082 68	4924 48	1295 92	4914 84	1492 76	4906 77	
1968 48	4897 25	2624 64	4887 73	3280 80	4887 41	3936 96	4892 66	
4921 20	4901 19	6561 60	4915 95	8202 00	4936 95	9842 40	4961 88	
13123 20	5012 73	16404 00	5006 87	19028 04	5110 83			
20	IF2E 1							
0 00	4903 22	8 56	4908 24	26 25	4909 13	879 25	4921 89	
1008 20	4921 27	1220 40	4923 86	1309 04	4922 84	1394 34	4924 32	
1551 82	4923 14	1817 43	4925 50	1988 48	4927 11	2624 64	4928 45	
3200 80	4930 42	3930 96	4925 70	4921 20	4910 80	6561 60	4917 83	
8202 00	4938 39	9842 40	4908 88	13123 20	5014 84	15157 30	5050 82	
33	IA2E 1							
0 00	4987 27	72 18	4988 39	88 58	4986 82	95 14	4970 74	
104 00	4988 07	108 27	4964 08	121 39	4953 18	124 87	4949 09	
131 23	4947 89	164 04	4944 46	173 88	4941 48	218 53	4937 87	
408 20	4933 21	541 33	4930 91	829 91	4932 42	879 13	4932 09	
702 00	4920 11	797 23	4928 22	935 83	4930 52	964 56	4929 83	
1090 07	4932 09	1358 25	4928 25	1840 40	4929 34	1968 48	4929 89	
2024 04	4931 93	3200 80	4931 58	3936 96	4926 22	4921 20	4909 39	
6561 00	4910 87	8202 00	4938 49	9842 40	4981 91	13123 20	5014 00	
15157 30	5050 89							
38	IF2H 1							
0 00	4920 28	52 49	4923 88	98 42	4925 88	114 83	4925 33	
127 95	4929 20	157 48	4933 37	229 66	4938 89	278 87	4939 54	
301 83	4941 15	341 20	4941 84	400 26	4948 73	419 94	4954 86	
472 44	4943 21	482 28	4937 54	495 40	4939 82	561 82	4937 73	
583 08	4940 55	610 23	4939 84	649 60	4940 52	725 08	4931 86	
807 08	4925 90	862 85	4922 21	951 43	4918 84	990 80	4911 19	
1131 88	4898 02	1289 35	4893 90	1325 44	4889 47	1391 86	4886 79	
1500 17	4882 32	1856 80	4878 29	1988 48	4872 84	2624 64	4871 59	
3280 80	4875 73	3930 96	4881 99	4921 20	4893 45	6561 60	4914 67	
8202 00	4936 38	9842 40	4960 24					
31	IA3A 1							
0 00	5057 98	59 05	5058 07	72 18	5026 12	95 14	5002 00	
114 83	4988 39	134 51	4978 09	150 92	4971 43	160 78	4970 57	
107 32	4987 89	193 57	4963 16	223 89	4961 72	252 62	4961 23	
275 59	4962 80	442 91	4967 83	557 74	4967 80	785 37	4969 53	
830 04	4908 51	902 22	4969 89	938 31	4969 23	1213 00	4970 45	
1423 87	4973 95	1453 39	4973 36	1640 40	4976 18	1968 48	4980 55	
2024 64	4998 38	3280 80	5000 68	3936 96	5011 23	4921 20	5027 73	
6561 00	5055 25	8202 00	5082 84	9842 40	5110 96			

# XBT's MERGED WITH HISTORICAL SIMAS

23	SF1C 1							
0 00	4955 50	408 70	4963 70	500 00	4944 00	1000 00	4920 00	
1250 00	4905 00	1500 00	4890 00	1750 00	4876 00	2000 00	4860 00	
2250 00	4850 00	2500 00	4855 00	2750 00	4854 00	3000 00	4850 00	
3250 00	4857 00	3500 00	4859 00	4000 00	4864 00	4500 00	4860 00	
5000 00	4874 00	6000 00	4885 00	7000 00	4890 00	9000 00	4930 00	
12000 00	4979 00	15000 00	5031 00	18557 40	5095 00			
23	SF1F 1							
0 00	4876 00	357 60	4882 10	750 00	4880 00	1000 00	4870 00	
1250 00	4859 00	1500 00	4852 00	1750 00	4848 00	2000 00	4846 00	
2250 00	4846 00	2500 00	4847 00	2750 00	4849 00	3000 00	4851 00	
3250 00	4853 00	3500 00	4855 00	4000 00	4860 00	4500 00	4864 00	
5000 00	4871 00	6000 00	4883 00	7000 00	4899 00	9000 00	4930 00	
12000 00	4979 00	15000 00	5031 00	15000 00	5049 00			
29	SA1F 1							
0 00	4949 00	00 40	4950 20	118 10	4900 00	180 50	4887 00	
370 00	4872 30	482 30	4873 00	500 00	4879 10	643 10	4883 10	
1000 00	4800 00	1120 70	4803 00	1400 40	4854 10	1500 00	4852 00	
1750 00	4848 00	2000 00	4846 00	2250 00	4846 00	2500 00	4847 00	
2750 00	4849 00	3000 00	4851 00	3250 00	4853 00	3500 00	4855 00	
4000 00	4860 00	4500 00	4864 00	5000 00	4871 00	6000 00	4883 00	
7000 00	4899 00	9000 00	4930 00	12000 00	4979 00	15000 00	5031 00	
10001 40	5049 00							
27	SF2A 1							
0 00	5024 00	85 30	5025 40	100 00	5025 00	200 00	5010 00	
300 00	4952 00	500 00	4920 00	750 00	4920 00	1000 00	4915 00	
1250 00	4910 00	1500 00	4905 00	1750 00	4899 00	2000 00	4892 00	
2250 00	4880 00	2500 00	4879 00	2750 00	4876 00	3000 00	4877 00	
3250 00	4879 00	3500 00	4880 00	4000 00	4885 00	4500 00	4891 00	
5000 00	4898 00	6000 00	4909 00	7000 00	4920 00	9000 00	4949 00	
12000 00	4995 00	15000 00	5044 00	17032 30	5077 00			
21	SF2E 1							
0 00	4907 00	20 20	4913 00	1000 00	4928 00	1220 50	4928 00	
1017 50	4930 20	1750 00	4920 00	2000 00	4925 00	2250 00	4923 00	
2500 00	4920 00	2750 00	4917 00	3000 00	4914 00	3250 00	4910 00	
3500 00	4900 00	4000 00	4902 00	4500 00	4902 00	5000 00	4903 00	
6000 00	4909 00	7000 00	4920 00	9000 00	4949 00	12000 00	4995 00	
15151 70	5040 50							
20	SA2E 1							
0 00	4979 00	72 20	4980 20	88 00	4978 00	95 10	4962 40	
121 40	4944 70	173 00	4933 00	400 30	4934 50	1000 00	4927 00	
1358 30	4922 50	1500 00	4920 00	1750 00	4920 00	2000 00	4925 00	
2250 00	4923 00	2500 00	4920 00	2750 00	4917 00	3000 00	4914 00	
3250 00	4910 00	3500 00	4906 00	4000 00	4902 00	4500 00	4902 00	
5000 00	4903 00	6000 00	4909 00	7000 00	4920 00	9000 00	4949 00	
12000 00	4995 00	15154 00	5040 50					
24	SF2H 1							
0 00	4801 00	114 00	4806 00	150 00	4801 00	300 00	4880 00	
550 00	4914 00	700 00	4910 00	1000 00	4884 00	1250 00	4868 00	
1500 00	4802 00	1750 00	4858 00	2000 00	4856 00	2250 00	4858 00	
2500 00	4800 00	2750 00	4862 00	3000 00	4864 00	3250 00	4867 00	
3500 00	4870 00	4000 00	4876 00	4500 00	4884 00	5000 00	4891 00	
6000 00	4906 00	7000 00	4920 00	9000 00	4949 00	10106 10	4966 00	
12	SA3A 1							
0 00	5050 50	59 10	5057 50	100 00	5010 00	200 00	4990 00	
350 00	4977 50	600 00	4975 80	1000 00	4976 30	1500 00	4977 00	
3000 00	4997 00	4200 00	5016 00	7200 00	5066 00	9614 70	5107 00	



## APPENDIX A

### Section A7

Historical SSP Plots (reference 2)

Solid lines identify ICAPS profiles

Dotted lines identify SIMAS profiles

FIG 1 & FIG 2

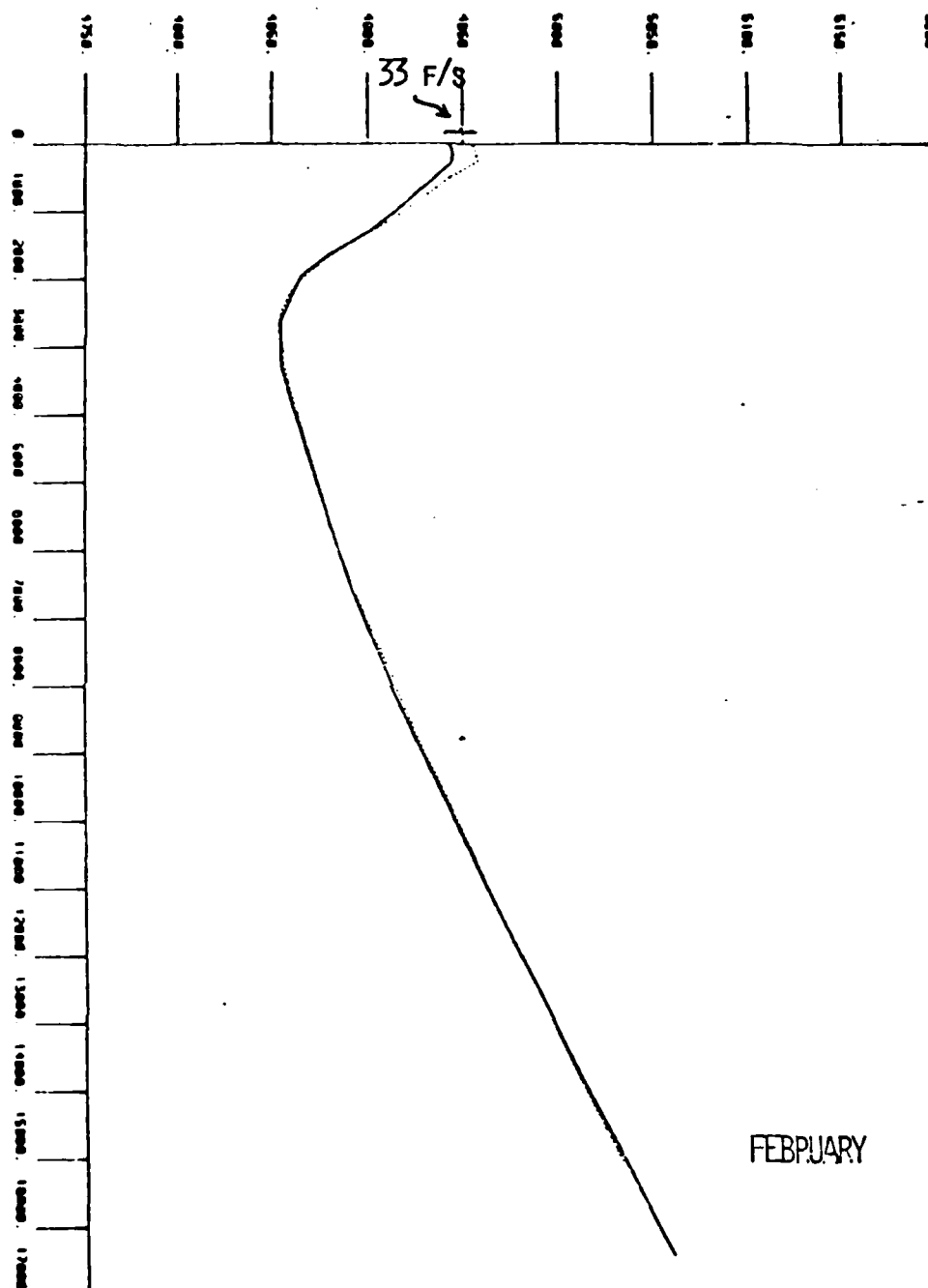


FIGURE (6)  
(A7-2)

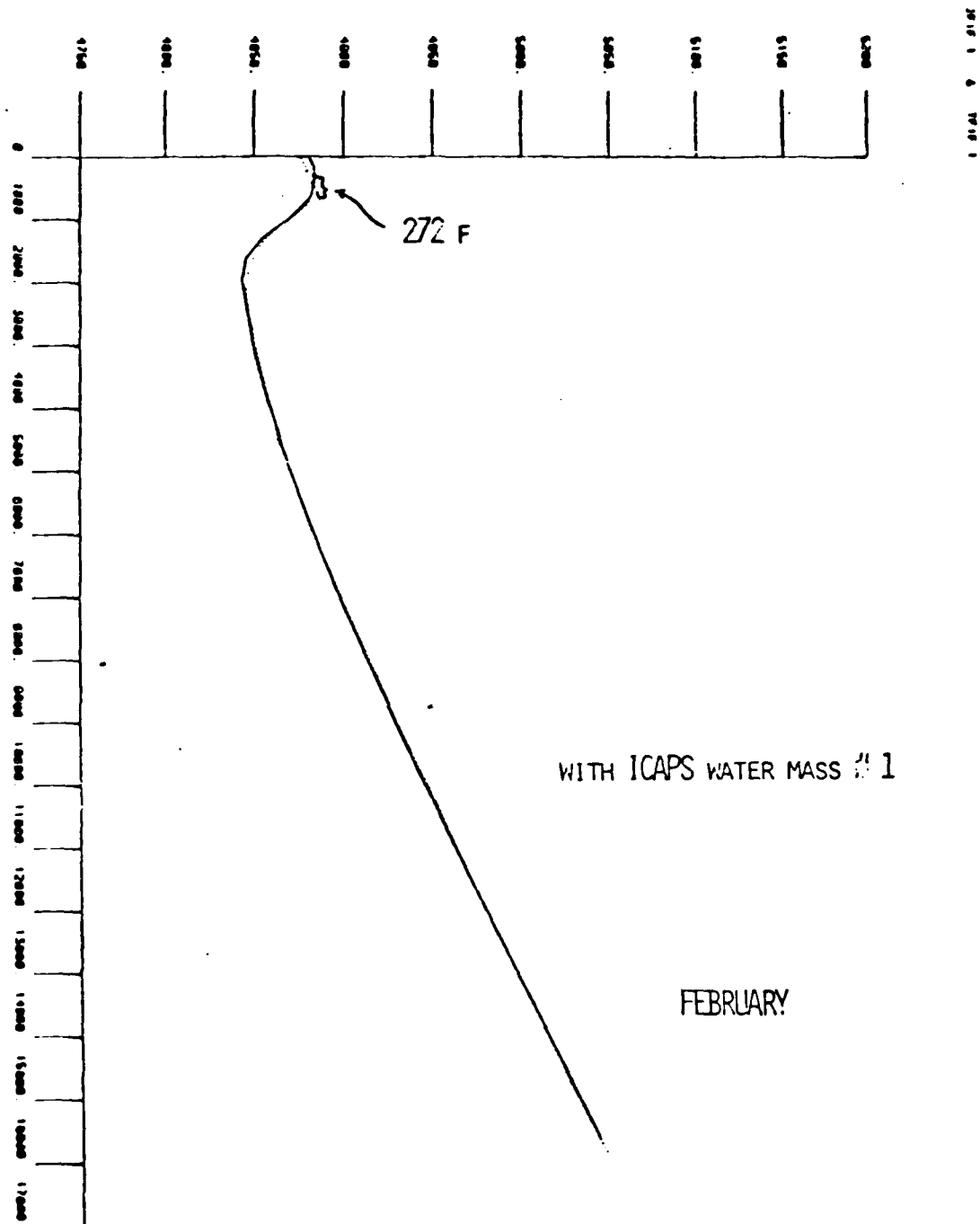


FIGURE (14)  
22 (A7-3)

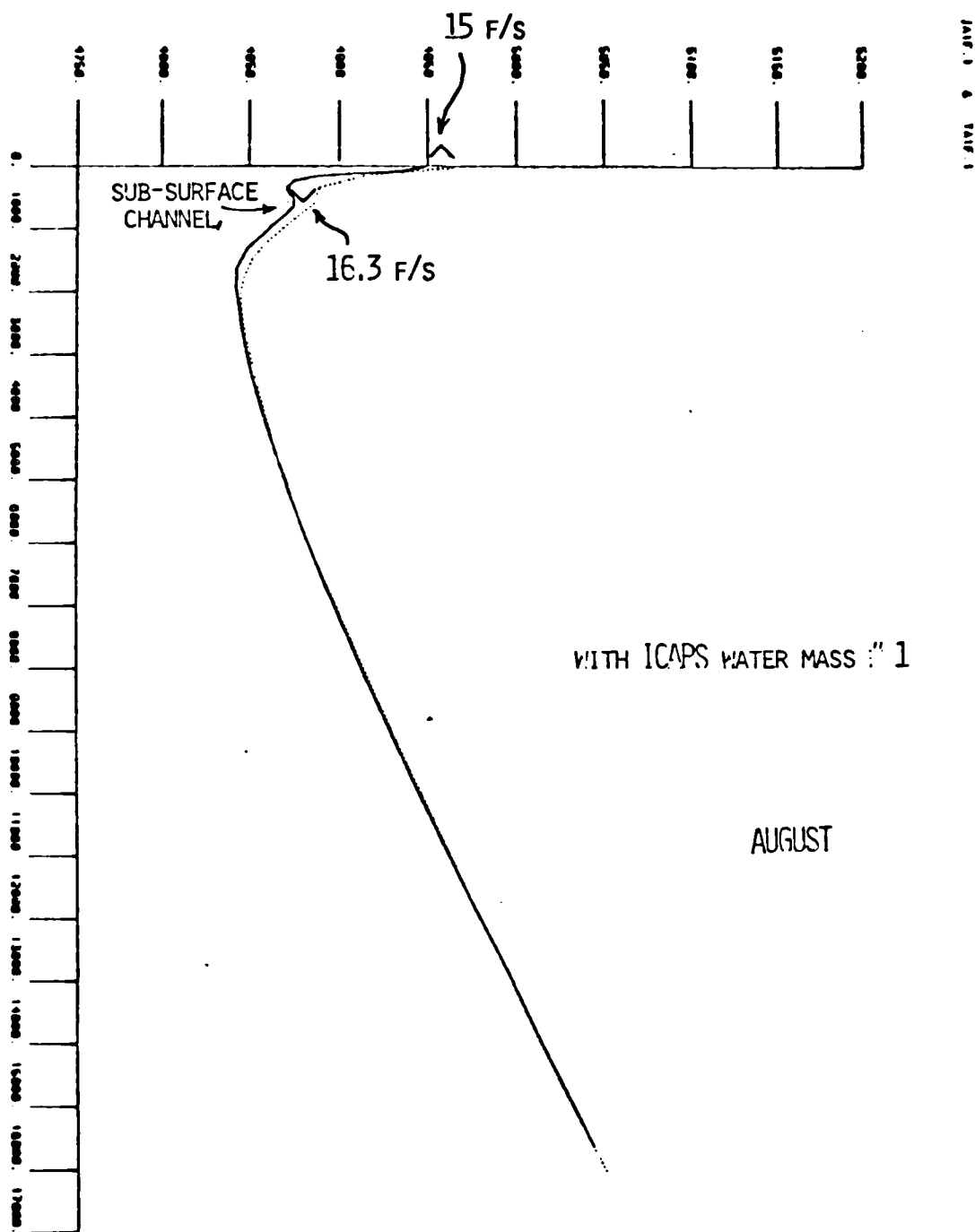


FIGURE (49)  
58 (A7-4)

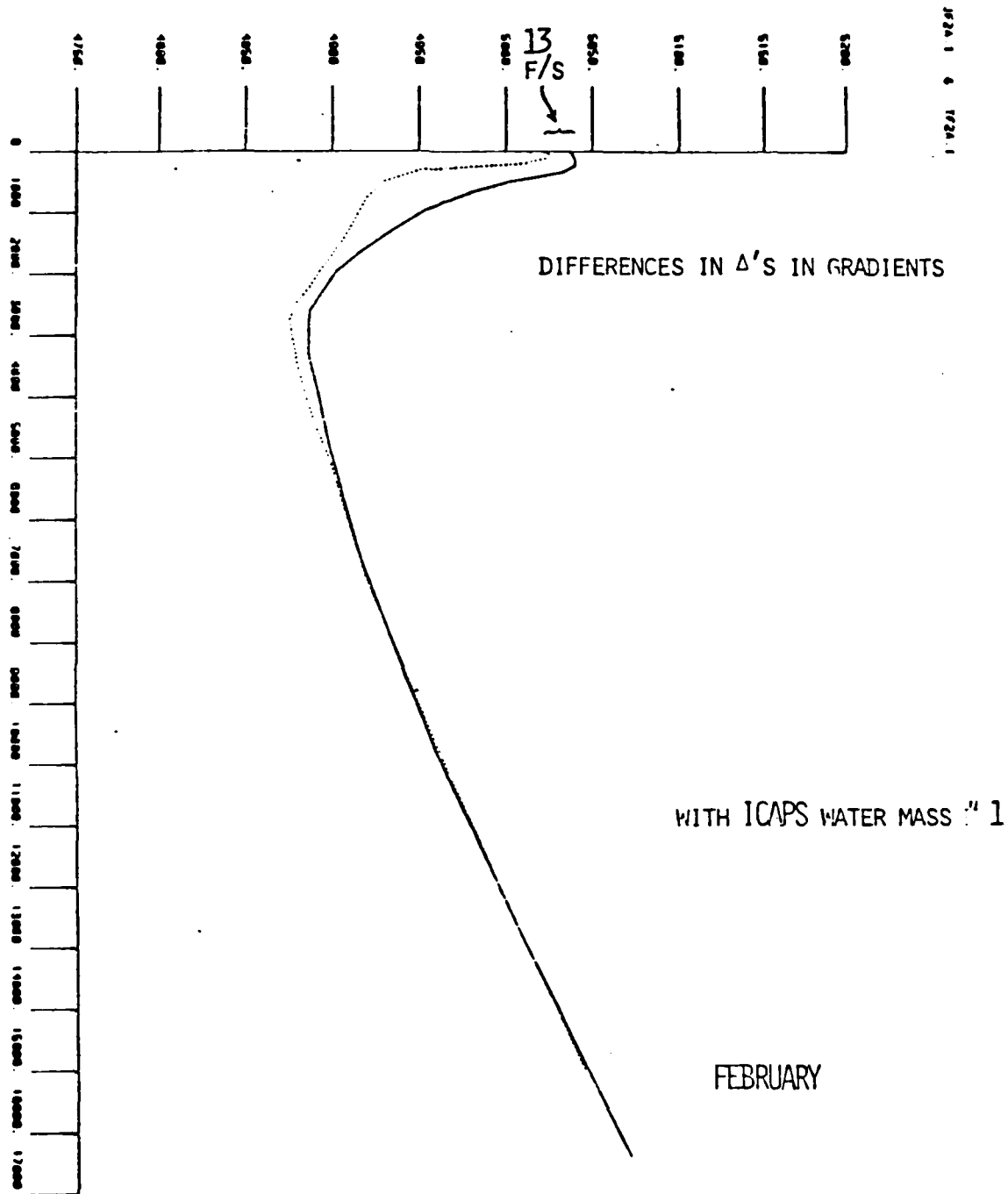


FIGURE (16)  
24 (A7-5)

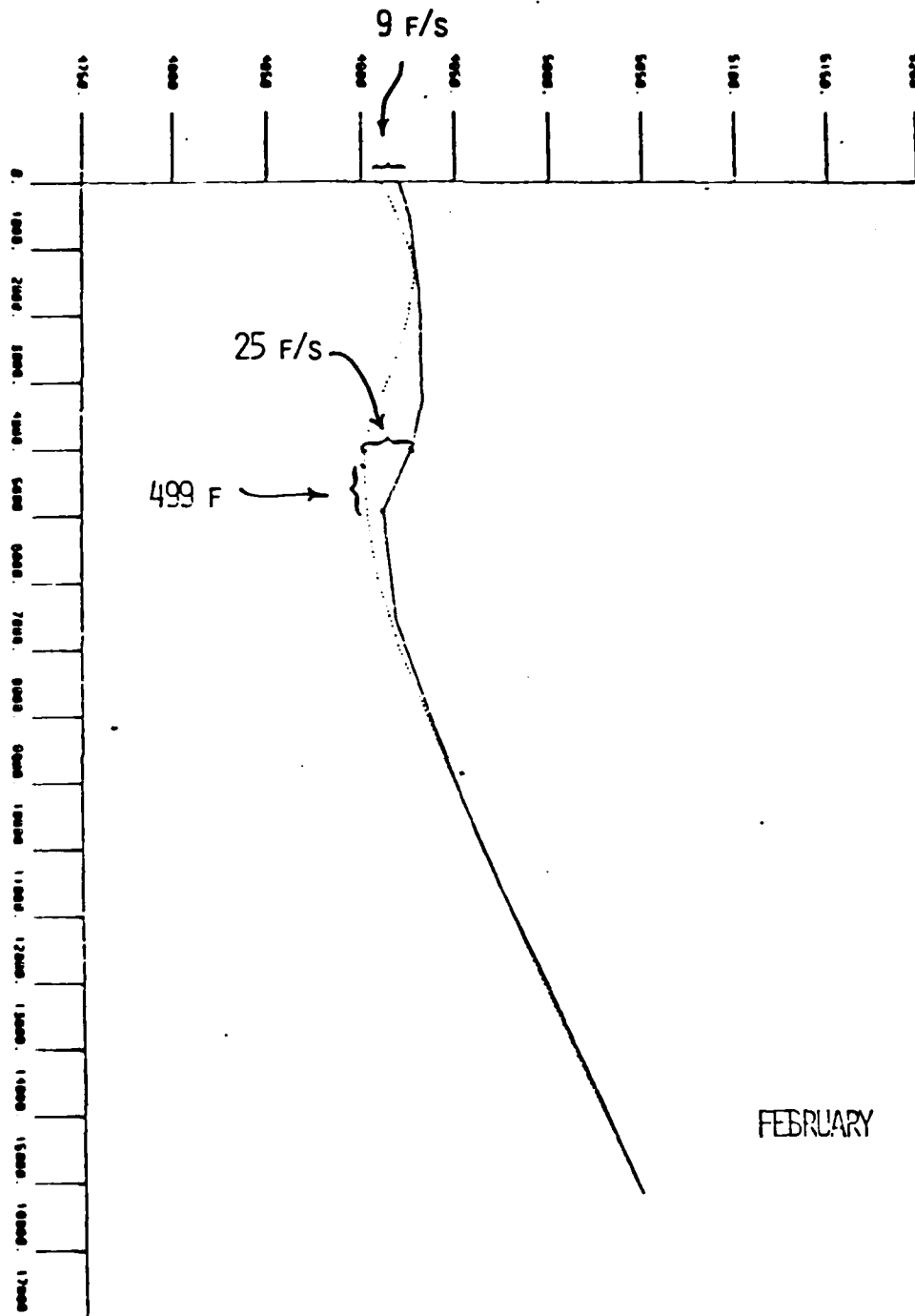


FIGURE (23)  
31 (A7-6)

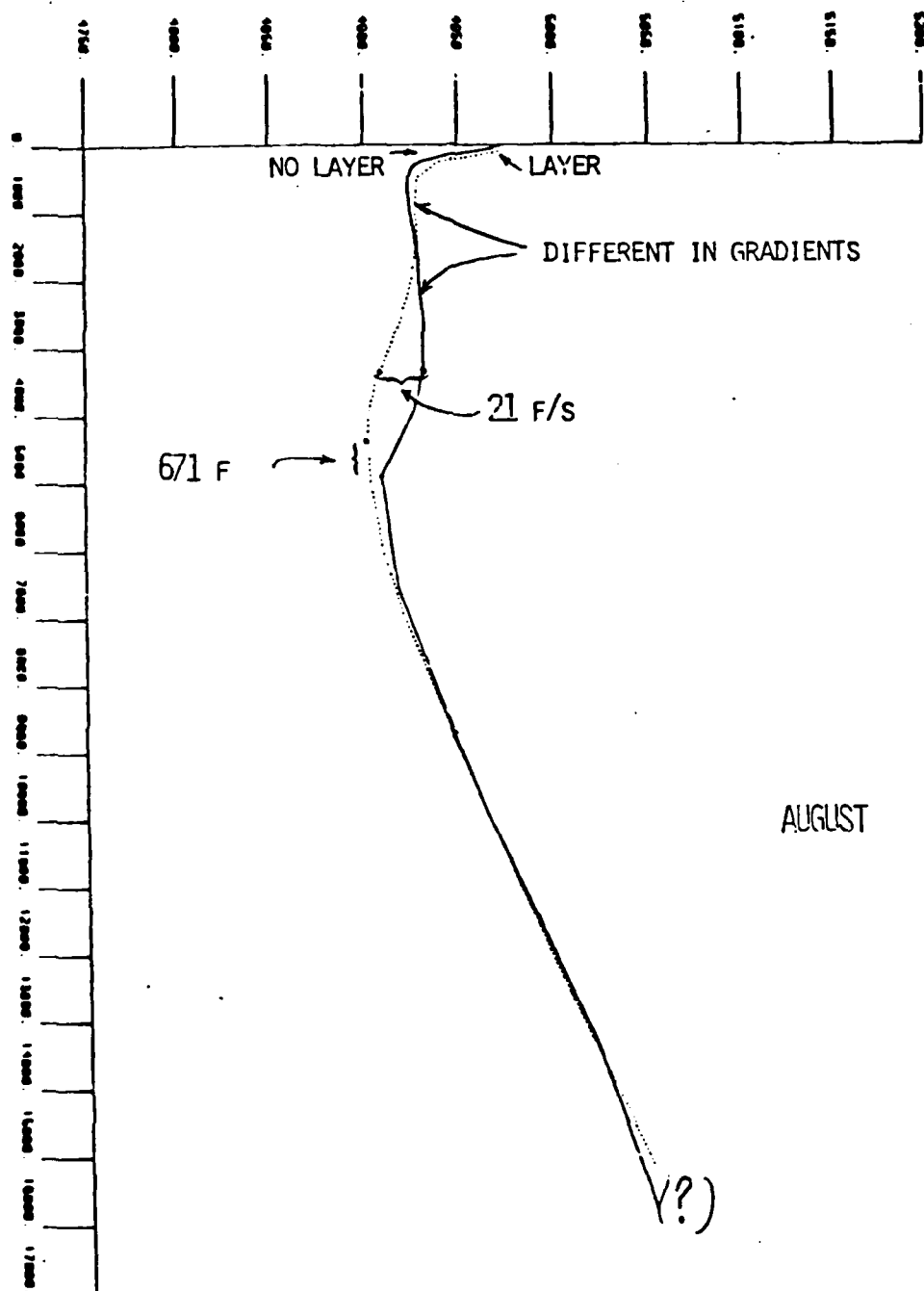


FIGURE (58)  
67 (A7-7)

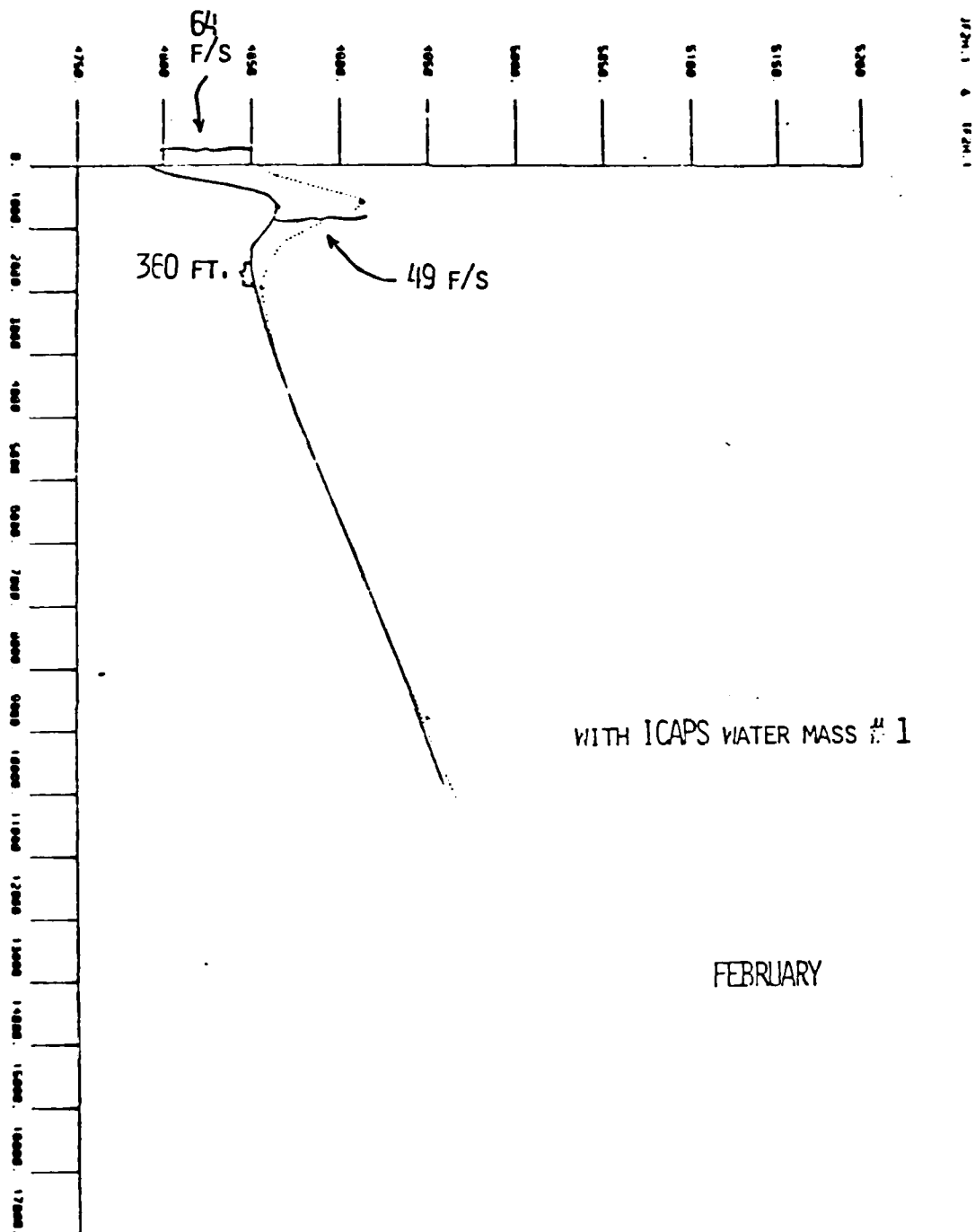


FIGURE (28) (A7-8)



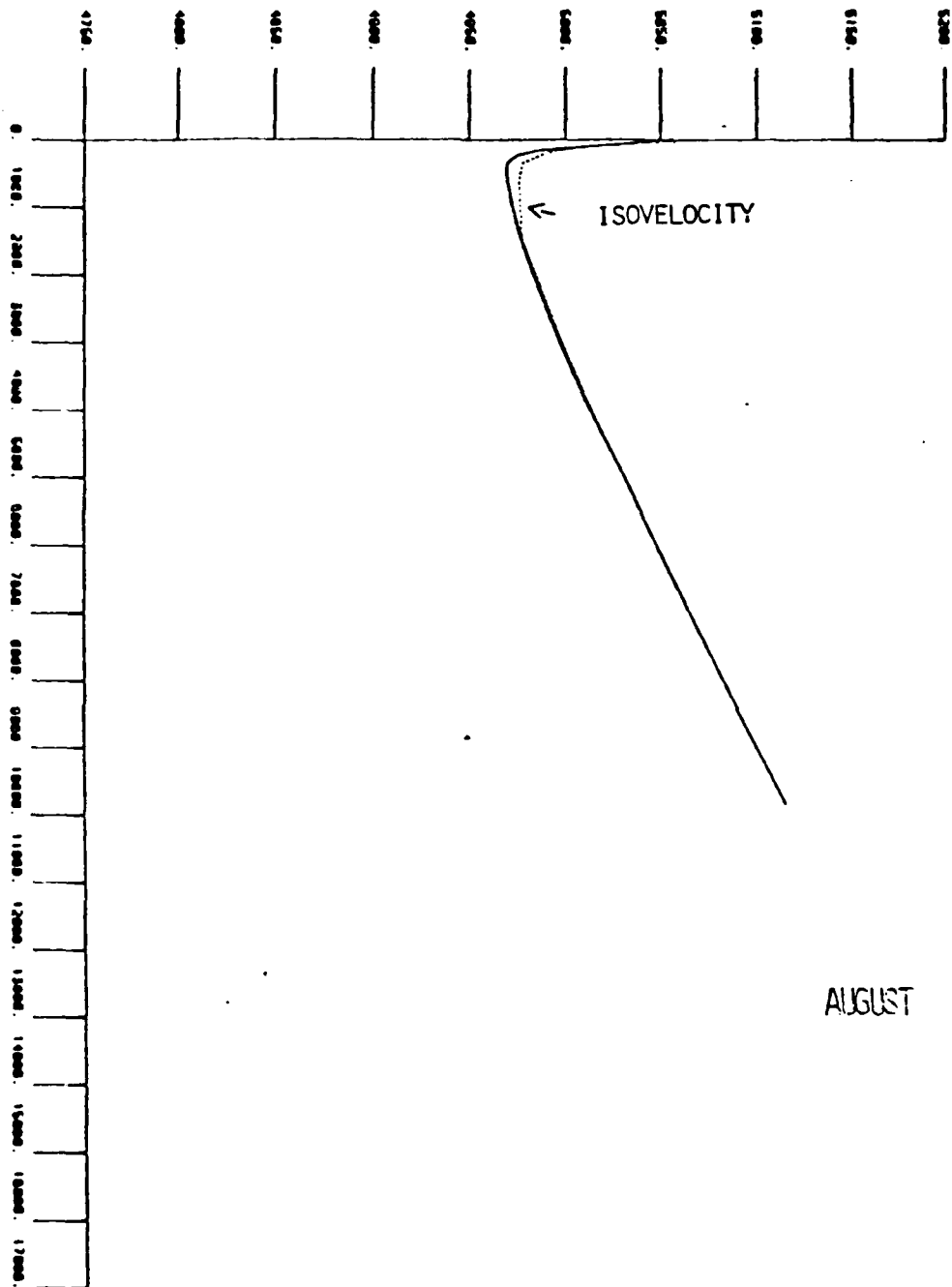


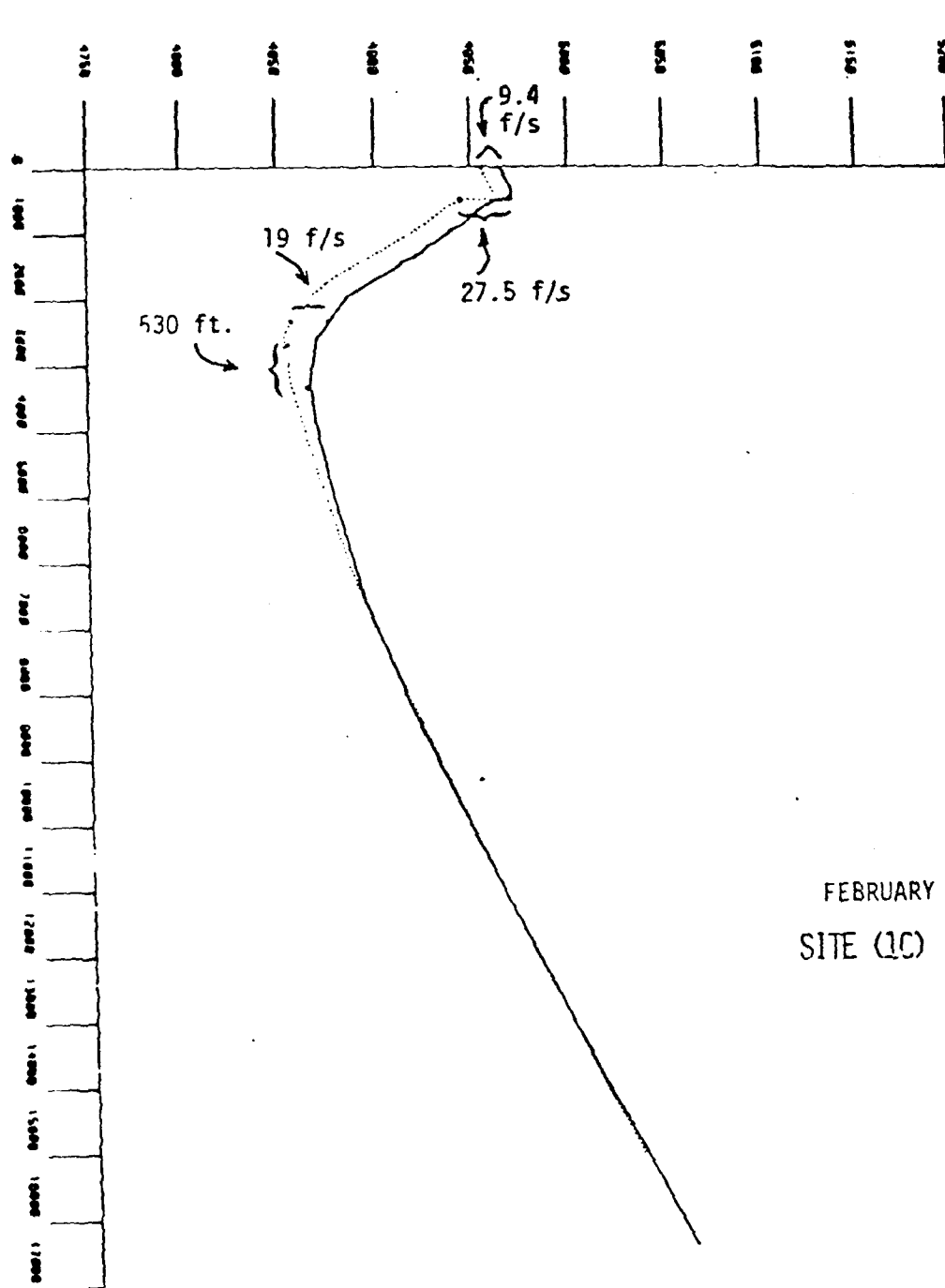
FIGURE (67)  
(A7-9)

## APPENDIX A

### Section A8

Generated SSP Plots (reference 2)

Solid lines identify ICAPS  
Dotted lines identify SIMAS



FEBRUARY  
SITE (10)

FIGURE 97  
108 (A8-2)

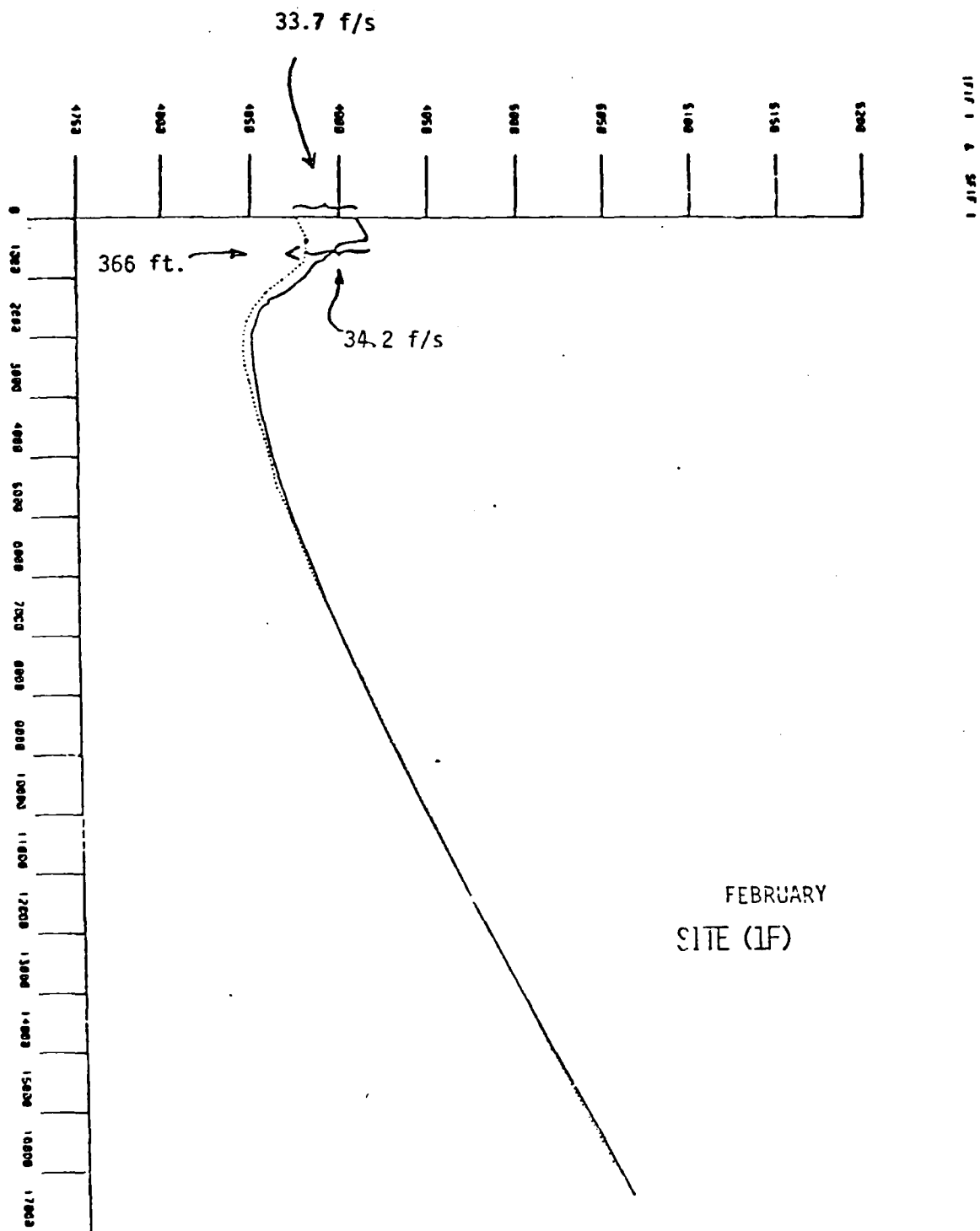


FIGURE 99  
(A8-3)  
56

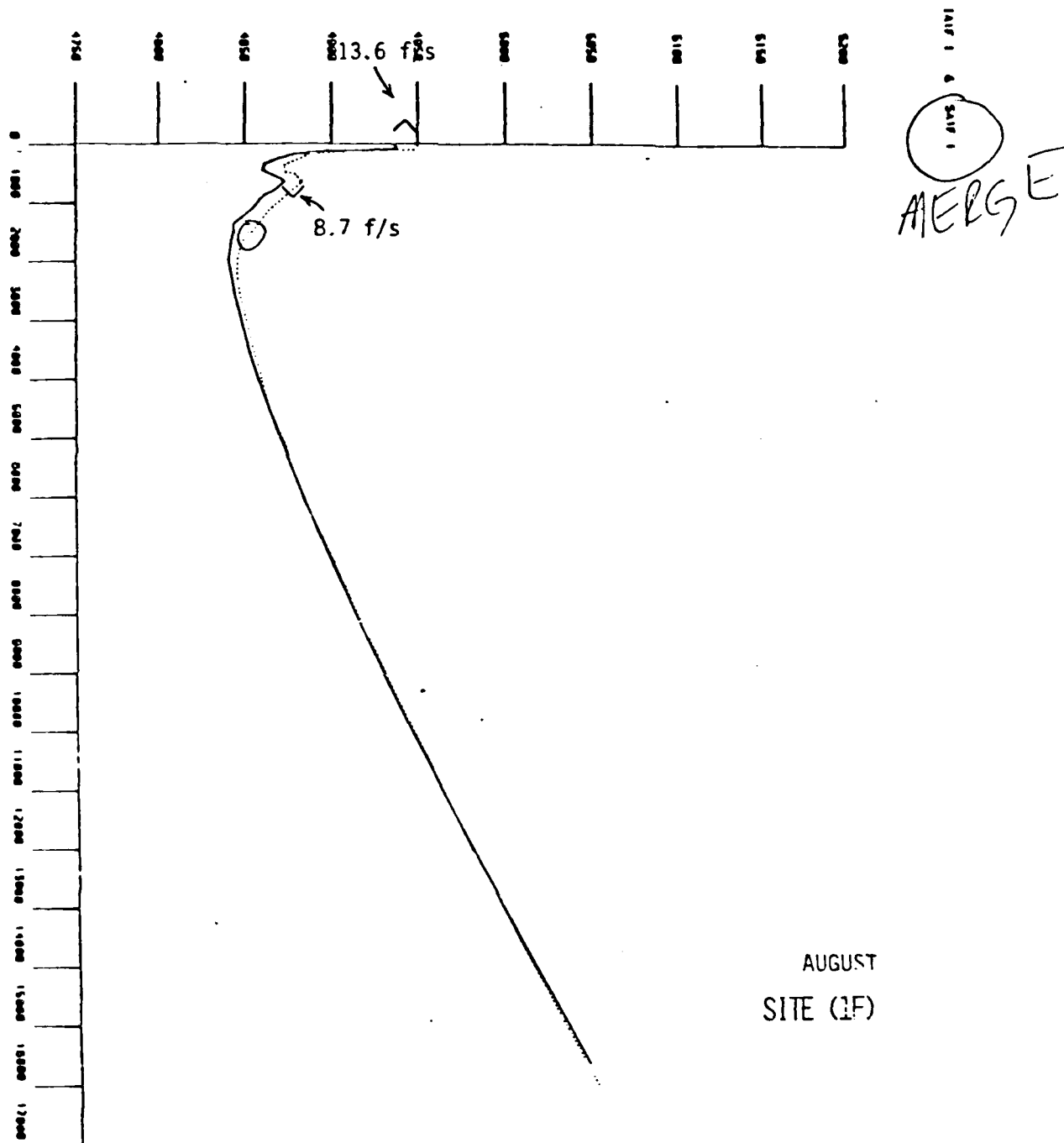
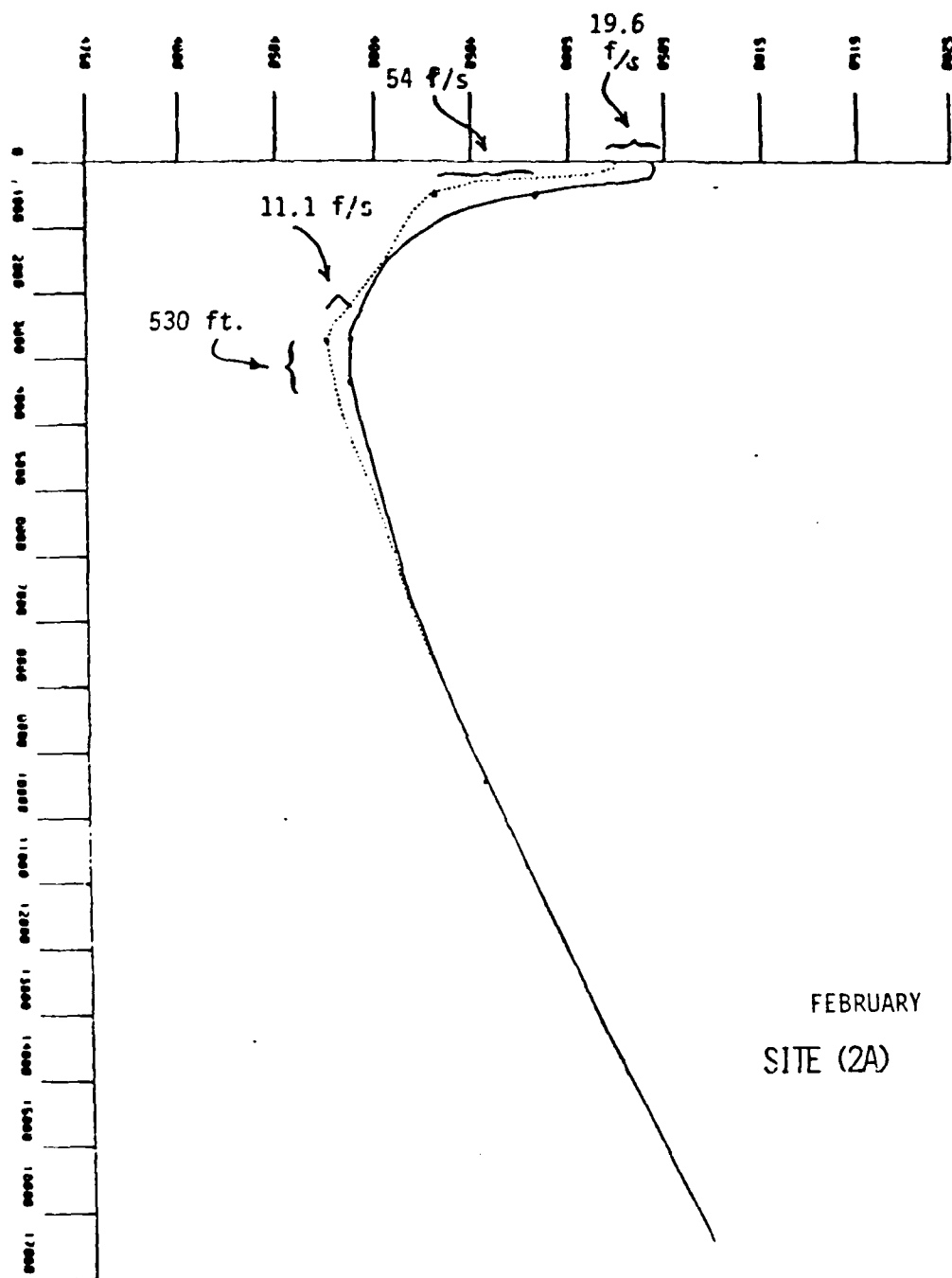
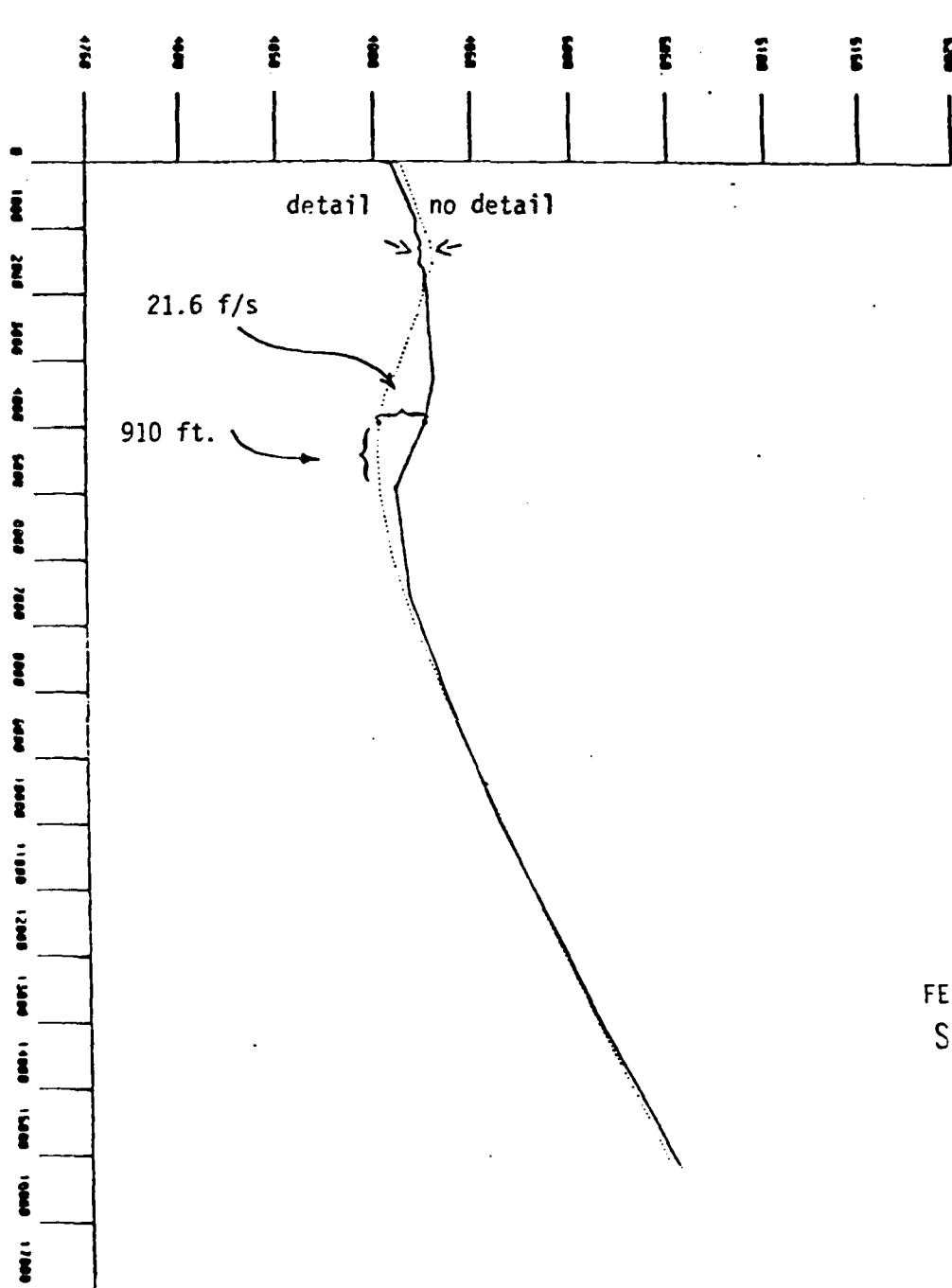


FIGURE 111  
121 (A8-4)



1724.1  
1724.1  
ADJ

FIGURE 100  
(A8-5)



FEBRUARY  
SITE (2E)

FIGURE 104  
(A8-6)

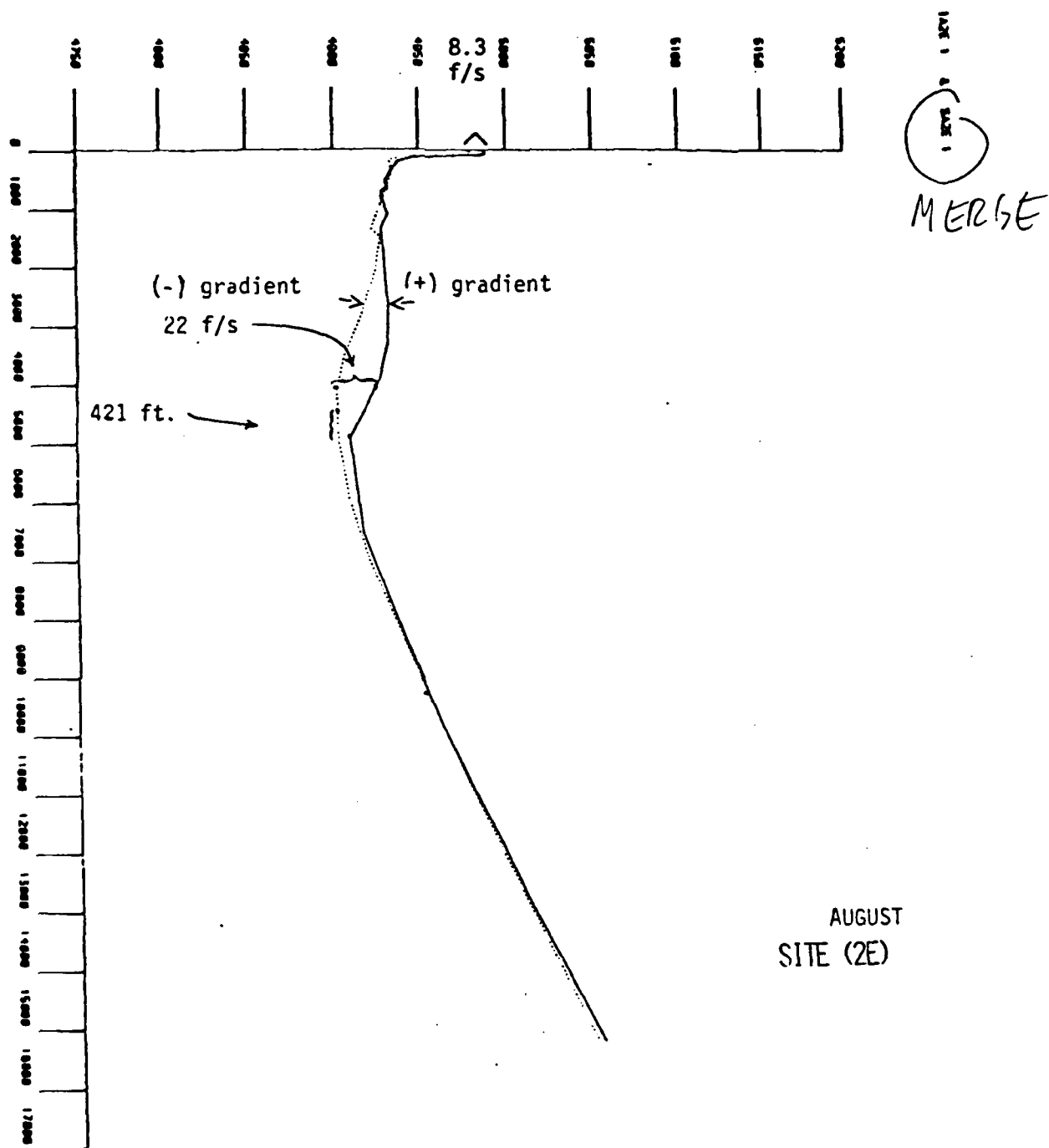
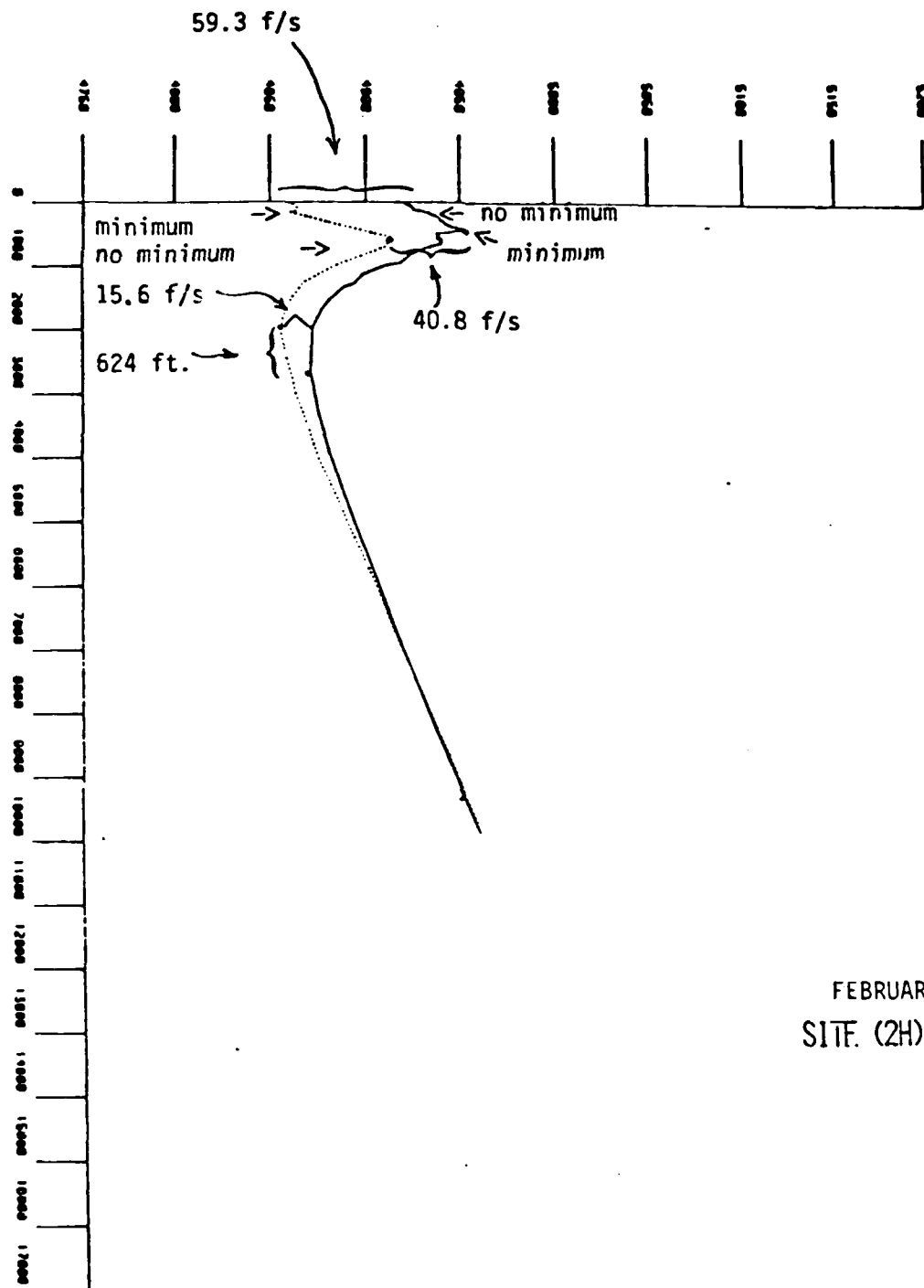


FIGURE 115  
(A8-7)

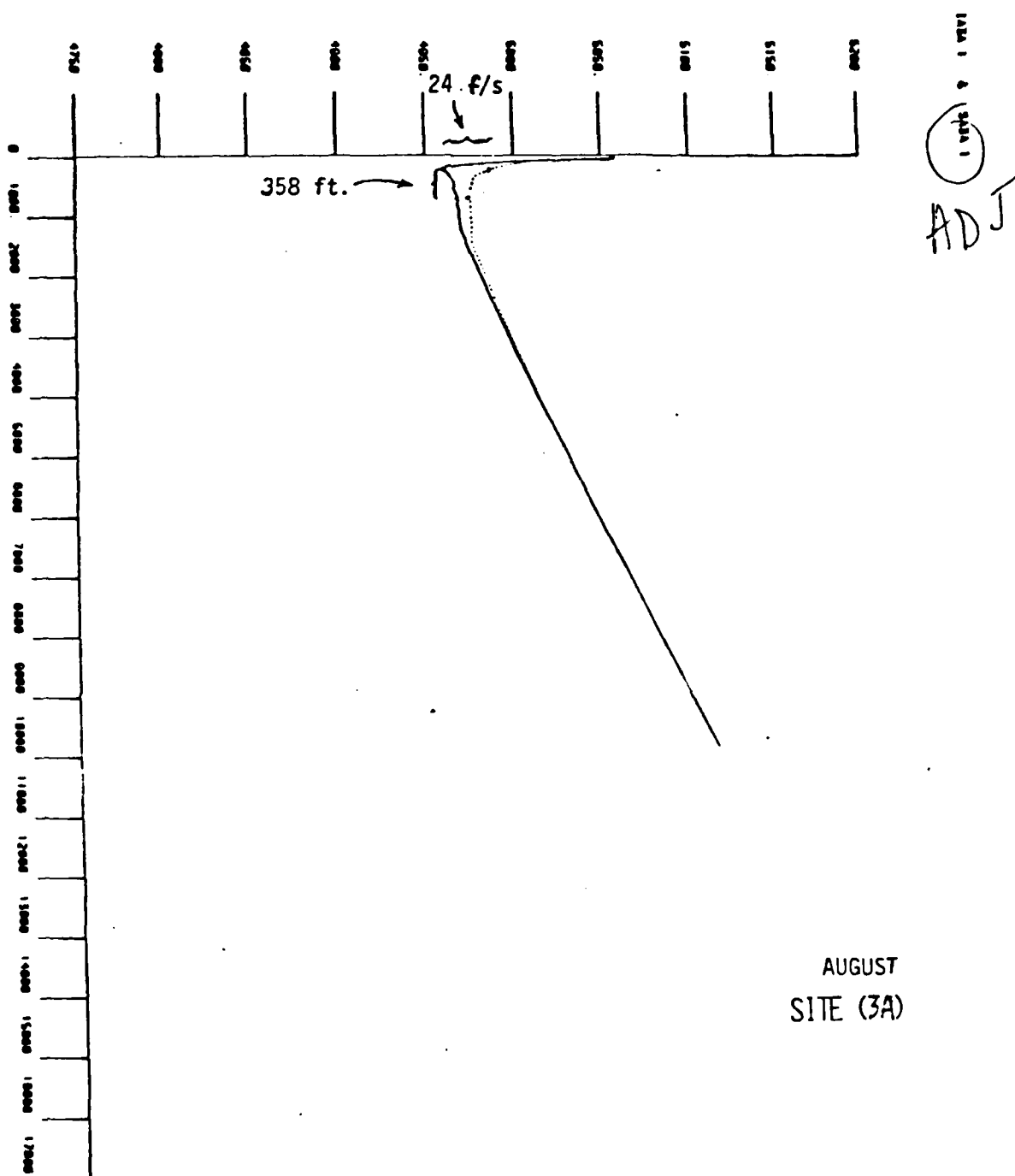




ADJ

FEBRUARY  
SITE. (2H)

FIGURE 105  
(A8-8)  
115



AUGUST  
SITE (3A)

FIGURE 119  
129 (A8-9)

## APPENDIX 3

### ICAPS Generated SSP's (CDC Version)

SECTION	CONTENTS
B1	ICAPS Environmental Profiles and Detailed BT Data
B2	ICAPS Environmental Profiles and Detailed BT Data (Different Water Mass Selections)
B3	ICAPS Environmental Profiles and Less Dense BT Data

APPENDIX B

Section B1

ICAPS Environmental Profiles and Detailed BT Data

ICAPS: PAC. STATION IC - FEB

\*\*\*\*\*HISTORICAL PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY M/SEC.	VELOCITY F/SEC.
0.00	0.00	14.92	58.86	34.57	1506.609	4943.183
10.00	32.81	14.92	58.86	34.57	1506.772	4943.719
20.00	65.62	14.90	58.82	34.57	1506.872	4944.046
30.00	98.43	14.87	58.77	34.56	1506.927	4944.228
50.00	164.35	14.84	58.71	34.56	1507.158	4944.986
75.00	246.08	14.68	58.42	34.53	1507.018	4944.528
100.00	328.10	14.59	57.90	34.50	1506.457	4942.686
125.00	410.13	13.98	57.16	34.47	1505.497	4939.535
150.00	492.15	13.58	56.44	34.44	1504.554	4936.440
200.00	656.20	12.73	54.91	34.39	1502.466	4929.590
250.00	820.25	11.93	53.47	34.33	1500.470	4923.043
300.00	984.30	11.10	51.98	34.27	1498.309	4915.951
400.00	1312.40	9.39	48.90	34.15	1493.605	4900.518
500.00	1640.50	7.44	45.39	34.05	1487.721	4881.212
600.00	1968.60	5.81	42.46	34.01	1482.857	4865.253
800.00	2624.80	4.18	39.52	34.15	1479.650	4854.731
1000.00	3281.00	3.45	38.21	34.30	1480.099	4856.205
1200.00	3937.20	3.07	37.53	34.41	1481.968	4862.335
1500.00	4921.50	2.62	36.72	34.51	1485.205	4872.958
2000.00	6562.00	1.95	35.51	34.60	1490.883	4891.587
2500.00	8202.50	1.66	34.99	34.63	1493.203	4915.603
3000.00	9843.00	1.56	34.81	34.66	1506.434	4942.610
4000.00	13124.00	1.50	34.70	34.67	1523.682	4999.201
5000.00	16405.00	1.55	34.79	34.66	1541.717	5058.374
5480.00	17979.88	1.57	34.83	34.68	1550.454	5087.040

MERGED DATA

HISTORICAL DATA

HT DATA

(MERGE FACTOR = 835\*10\*\*-3)

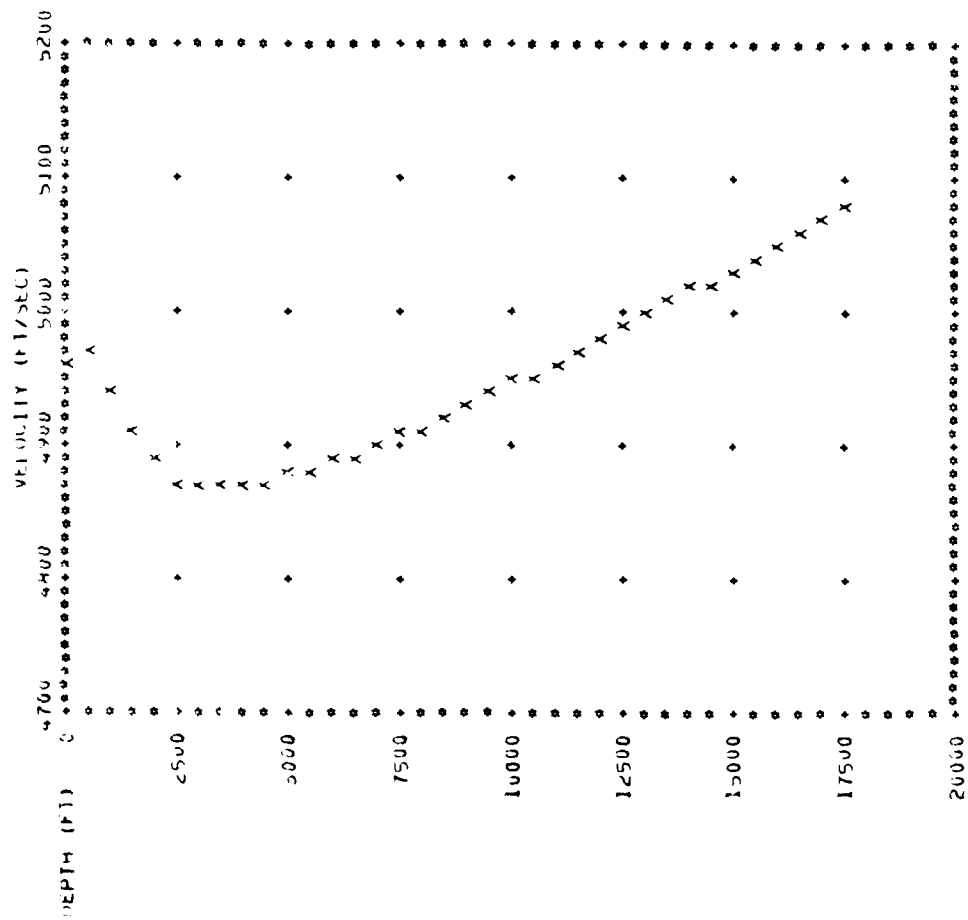
DEP (M)	TEMP (C)	SAL (PPT)	DEP (M)	TEMP (C)	SAL (PPT)	DEP (M)	TEMP (C)	SAL (PPT)	DEP (M)	TEMP (C)	SAL (PPT)
0.	17.13	34.41	0.	14.92	34.57	0.	17.13	34.41	0.	17.13	34.41
14.	17.23	34.46	10.	14.92	34.57	14.	17.23	34.46	14.	17.23	34.46
98.	17.20	34.46	20.	14.90	34.57	98.	17.20	34.46	98.	17.20	34.46
143.	17.13	34.45	30.	14.87	34.56	143.	17.13	34.45	143.	17.13	34.45
150.	17.00	34.44	50.	14.84	34.56	150.	17.00	34.44	150.	17.00	34.44
156.	16.17	34.43	75.	14.68	34.53	156.	16.17	34.43	156.	16.17	34.43
158.	16.03	34.43	100.	14.39	34.50	158.	16.03	34.43	158.	16.03	34.43
211.	14.85	34.38	125.	13.98	34.47	211.	14.85	34.38	211.	14.85	34.38
253.	14.21	34.33	150.	13.58	34.44	253.	14.21	34.33	253.	14.21	34.33
275.	13.79	34.30	200.	12.73	34.39	275.	13.79	34.30	275.	13.79	34.30
288.	13.40	34.28	250.	11.93	34.33	288.	13.40	34.28	288.	13.40	34.28
345.	12.35	34.22	300.	11.10	34.27	345.	12.35	34.22	345.	12.35	34.22
367.	11.93	34.19	400.	9.39	34.15	367.	11.93	34.19	367.	11.93	34.19
401.	11.40	34.15	500.	7.44	34.05	401.	11.40	34.15	401.	11.40	34.15
			600.	5.81	34.01						

417.	11.06	34.13	1000.	3.42	34.30	417.	11.08	34.13
418.	11.05	12	120	3	34	426.	10.75	34.12
419.	10.58	34.11	1500.	2.62	34.51	437.	10.50	34.11
420.	10.55	34.09	2000.	1.95	34.60	442.	10.39	34.09
421.	10.52	34.10	2500.	1.60	34.63	449.	10.35	34.10
422.	10.50	34.10	3000.	1.56	34.66	474.	9.87	34.07
423.	9.57	34.01	4000.	1.50	34.67	600.	7.45	34.01
			5000.	1.55	34.68	800.	5.32	34.15
			5400.	1.57	34.68	1000.	4.25	34.30
						1200.	3.63	34.41
						1500.	2.94	34.51
						2000.	2.08	34.60
						2500.	1.71	34.63
						3000.	1.58	34.66
						4000.	1.50	34.67
						5000.	1.55	34.68
						5400.	1.57	34.68

\*\*\*\*\*ICAPS GENERATED SOUND VELOCITY PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MI./SEC.	VELOCITY FT./SEC.
6.00	6.00	17.13	62.83	34.41	1513.231	4964.910
14.00	45.93	17.23	63.01	34.46	1513.807	4966.802
98.00	321.54	17.20	62.96	34.46	1515.094	4971.024
143.00	469.18	17.13	62.83	34.45	1515.611	4972.719
150.00	492.15	17.00	62.60	34.44	1515.326	4971.786
156.00	511.84	16.17	61.11	34.43	1512.899	4963.823
158.00	518.40	16.03	60.85	34.43	1512.499	4962.509
211.00	692.29	14.85	58.73	34.38	1509.598	4952.991
253.00	830.09	14.21	57.58	34.33	1508.163	4948.283
275.00	902.28	13.79	56.82	34.30	1507.118	4944.853
268.00	884.93	13.40	56.12	34.28	1506.022	4941.258
345.00	1131.95	12.35	54.23	34.22	1503.329	4932.421
353.00	1158.19	12.28	54.10	34.21	1503.208	4932.025
367.00	1204.13	11.93	53.47	34.19	1502.210	4928.752
401.00	1315.68	11.40	52.52	34.15	1500.869	4924.350
411.00	1348.49	11.10	51.98	34.12	1499.944	4921.317
417.00	1368.18	11.03	51.94	34.13	1499.982	4921.442
426.00	1397.71	10.75	51.35	34.12	1498.945	4918.037
437.00	1433.80	10.58	51.04	34.11	1498.502	4916.586
442.00	1450.20	10.39	50.70	34.09	1497.869	4914.508
449.00	1473.17	10.39	50.70	34.10	1498.000	4914.939
476.00	1561.76	9.87	49.77	34.07	1496.521	4910.085
600.00	1968.60	7.45	45.41	34.01	1489.347	4886.548
800.00	2624.80	5.32	41.58	34.15	1484.371	4870.221
1000.00	3281.00	4.25	39.64	34.30	1483.453	4867.209
1200.00	3937.20	3.63	38.53	34.41	1484.329	4870.082
1500.00	4921.50	2.04	37.30	34.51	1486.594	4877.515
2000.00	6562.00	2.04	37.75	34.60	1491.454	4893.460
2500.00	8202.50	1.71	35.08	34.63	1498.435	4916.365
3000.00	9843.00	1.58	34.83	34.66	1506.528	4942.919
4000.00	13244.00	1.56	34.71	34.67	1523.698	4999.252
5000.00	16405.00	1.55	34.79	34.68	1541.720	5058.382
5480.00	17979.88	1.57	34.83	34.68	1550.455	5087.044

# \*\*\*VELOCITY PROFILER\*\*\*





\*\*\*\*\*HISTORICAL PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MI./SEC.	VELOCITY FT./SEC.
0.00	0.00	9.84	49.71	33.40	1487.753	4881.316
10.00	32.81	9.83	49.69	33.39	1487.866	4881.689
20.00	65.62	9.81	49.66	33.39	1487.956	4881.983
30.00	98.43	9.80	49.64	33.40	1488.095	4882.440
50.00	154.05	9.82	49.69	33.40	1488.495	4883.752
75.00	246.08	9.75	49.55	33.42	1488.672	4884.332
100.00	328.10	9.64	49.35	33.51	1488.791	4884.722
125.00	410.12	9.42	48.96	33.65	1488.566	4883.986
150.00	492.15	9.21	48.58	33.82	1488.414	4883.487
200.00	656.23	8.81	47.86	33.97	1487.930	4881.898
250.00	820.25	8.21	46.78	33.98	1486.489	4877.171
300.00	984.30	7.48	45.46	33.97	1484.485	4870.596
400.00	1312.40	5.39	42.60	33.94	1474.792	4855.197
500.00	1640.50	4.82	40.68	33.97	1477.109	4846.394
600.00	1968.60	4.23	39.61	34.04	1476.399	4844.066
800.00	2624.80	3.64	38.59	34.21	1477.542	4847.815
1000.00	3281.00	3.19	37.74	34.32	1479.019	4852.660
1200.00	3937.20	2.84	37.11	34.41	1480.981	4859.100
1500.00	4921.50	2.42	36.36	34.49	1484.314	4870.334
2000.00	6562.00	1.97	35.55	34.59	1490.956	4891.827
2500.00	8202.50	1.73	35.11	34.63	1498.508	4916.605
3000.00	9843.00	1.57	34.83	34.66	1506.478	4942.753
4000.00	13124.00	1.45	34.68	34.67	1523.635	4959.060
4750.00	15564.75	1.43	34.57	34.68	1536.724	5041.992

BT DATA

HISTORICAL DATA

MERGED DATA

(MERGE FACTOR = 835\*10\*\*3)

DEPTH (M)	TEMP (C)	SAL (PPT)	DEPTH (M)	TEMP (C)	SAL (PPT)	DEPTH (M)	TEMP (C)	SAL (PPT)
0.	12.30	33.40	0.	9.84	33.40	0.	12.30	33.40
93.	12.37	33.48	10.	9.83	33.39	93.	12.37	33.48
109.	12.32	33.56	20.	9.81	33.39	109.	12.32	33.56
117.	12.07	33.61	30.	9.80	33.40	117.	12.07	33.61
129.	11.15	33.66	50.	9.82	33.40	129.	11.15	33.66
131.	11.01	33.59	75.	9.75	33.42	131.	11.01	33.69
135.	10.77	33.71	100.	9.64	33.51	135.	10.77	33.71
155.	10.31	33.84	125.	9.42	33.65	155.	10.35	33.84
177.	10.06	33.90	150.	9.21	33.82	177.	10.31	33.88
195.	9.88	33.95	200.	8.81	33.97	195.	10.06	33.90
202.	9.66	33.97	250.	8.21	33.98	202.	9.88	33.95
209.	9.46	33.97	300.	7.48	33.97	209.	9.66	33.97
214.	9.12	33.98	400.	5.39	33.94	214.	9.46	33.97
300.	4.27	33.97	500.	4.82	33.97	300.	9.12	33.98
375.	6.48	33.94	600.	4.23	34.04	375.	8.27	33.97
			800.	3.66	34.21		6.48	33.94

AD-A110 891

OCEAN DATA SYSTEMS INC ROCKVILLE MD

F/S 17/1

THE CAUSE OF SOUND SPEED PROFILE DIFFERENCES BETWEEN ICAPS AND --ETC(U)

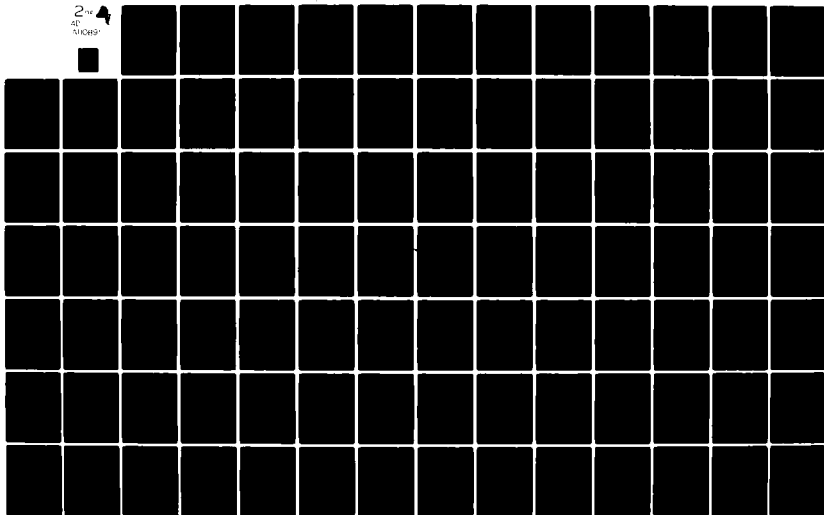
MAY 80 J H LOCKLIN, B W SCAIFE

N00014-79-C-0676

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AL  
"KICKS"



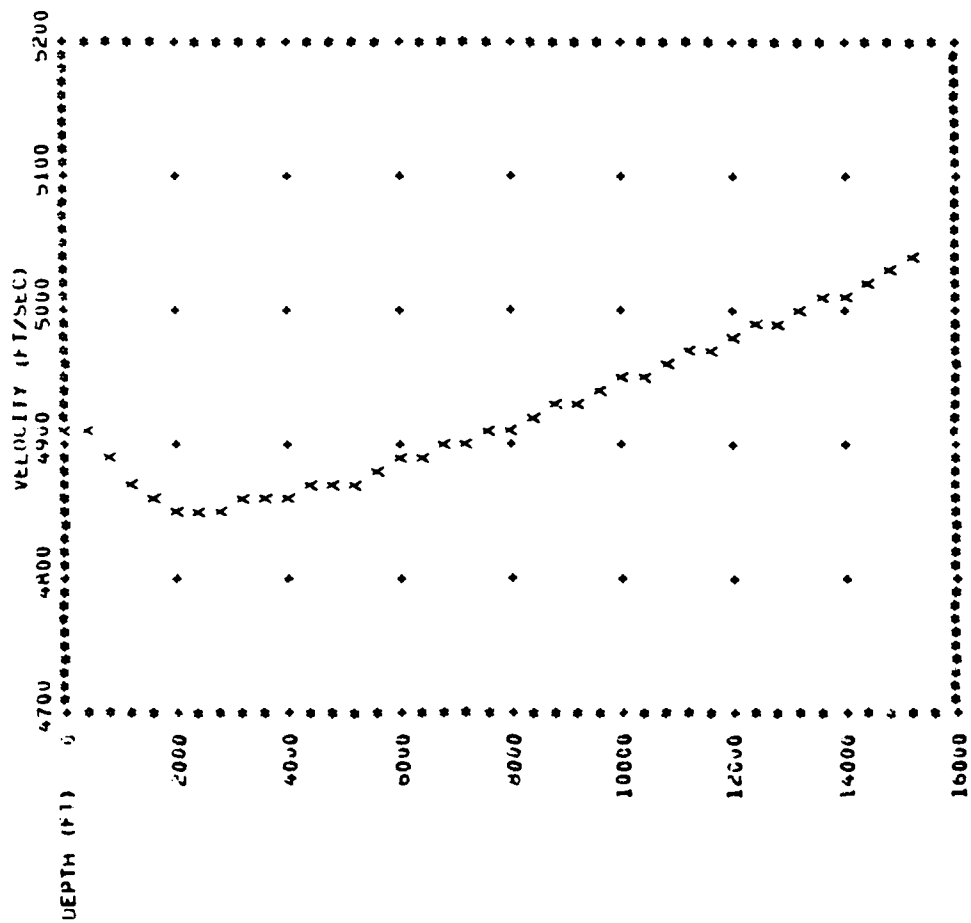
4.17.	6.08	33.93	1200.	2.84	34.41	437.	6.06	33.93
4.56.	5.82	33.96	1500.	2.	34.	456.	4.13	33.95
497.	5.43	33.97	2000.	1.97	34.59	497.	5.82	33.96
			2500.	1.73	34.63	600.	5.43	33.97
			3000.	1.57	34.66	800.	4.71	34.04
			4000.	1.49	34.67	1000.	4.00	34.21
			4750.	1.43	34.68	1200.	3.42	34.32
						1500.	3.00	34.41
						2000.	2.52	34.49
						2500.	2.01	34.59
						3000.	1.75	34.63
						4000.	1.58	34.66
						4750.	1.49	34.67
							1.43	34.67

\*\*\*\*\*ICAPS GENERATED SOUND VELOCITY PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MI./SEC.	VELOCITY FT./SEC.
0.00	0.00	12.30	54.14	33.40	1446.490	4909.984
93.00	305.13	12.37	54.27	33.48	1498.354	4916.101
109.00	357.63	12.32	54.18	33.50	1498.539	4916.707
117.00	383.86	12.07	53.73	33.61	1497.865	4914.496
126.00	413.41	11.15	52.07	33.66	1494.859	4904.633
131.00	429.81	11.01	51.82	33.69	1494.487	4903.413
134.00	439.65	10.77	51.39	33.71	1493.707	4900.852
155.00	508.56	10.35	50.63	33.84	1492.698	4897.541
169.00	554.49	10.31	50.56	33.88	1492.836	4897.994
177.00	580.74	10.06	50.11	33.90	1492.090	4895.547
194.00	636.51	9.88	49.78	33.95	1491.777	4894.519
202.00	662.76	9.66	49.39	33.97	1491.124	4892.378
220.00	721.82	9.46	49.03	33.97	1490.686	4890.940
234.00	767.75	9.12	48.42	33.98	1489.656	4887.562
304.00	997.42	8.27	46.89	33.97	1487.588	4880.778
387.00	1269.75	6.98	44.56	33.94	1483.925	4868.758
425.00	1394.43	6.24	43.23	33.95	1481.619	4861.193
437.00	1433.80	6.08	42.94	33.93	1481.155	4859.671
445.00	1460.05	6.13	43.03	33.95	1481.516	4860.852
458.00	1496.14	5.82	42.48	33.96	1480.453	4857.366
497.00	1630.66	5.43	41.77	33.97	1479.562	4854.443
600.00	1968.60	4.71	40.48	34.04	1478.408	4850.658
800.00	2624.80	4.00	39.19	34.21	1478.961	4852.471
1000.00	3281.00	3.42	38.16	34.32	1480.018	4855.940
1200.00	3937.20	3.00	37.41	34.41	1481.683	4861.402
1500.00	4921.50	2.52	36.53	34.49	1484.726	4871.385
2000.00	6562.00	2.01	35.62	34.59	1491.124	4892.379
2500.00	8202.50	1.75	35.14	34.63	1498.576	4916.829
3000.00	9843.00	1.58	34.84	34.66	1506.505	4942.844
4000.00	13124.00	1.49	34.68	34.67	1523.644	4999.075
4750.00	15584.75	1.43	34.57	34.67	1536.712	5041.950

THE LAYER IS AT 357.63 FEET ( 109.01 METERS).

\*\*\*VELOCITY PROFILE\*\*\*



ICAPST PAC. STATION 14 - AUG SUM 2

\*\*\*\*\*HISTORICAL PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
0.00	0.00	16.04	60.87	33.16	1508.402	4949.067
10.00	32.81	15.78	60.40	33.17	1507.770	4946.992
20.00	65.62	14.93	58.87	33.20	1505.286	4938.844
30.00	98.43	13.52	56.34	33.24	1500.903	4924.464
50.00	164.05	10.35	50.63	33.36	1490.376	4889.923
75.00	246.08	9.00	48.20	33.44	1485.913	4875.282
100.00	328.10	8.61	47.50	33.51	1484.944	4872.100
125.00	410.13	8.46	47.23	33.61	1484.913	4872.001
150.00	492.15	8.53	47.35	33.79	1485.822	4874.981
200.00	656.20	8.28	46.90	33.96	1485.911	4875.275
250.00	820.25	7.60	45.68	33.96	1484.118	4869.390
300.00	984.30	6.83	44.29	33.95	1481.914	4862.158
400.00	1312.40	5.50	41.90	33.94	1478.211	4850.011
500.00	1640.50	4.65	40.37	33.99	1476.432	4844.172
600.00	1968.60	4.20	39.56	34.07	1476.314	4843.787
800.00	2624.80	3.59	38.46	34.23	1477.273	4846.931
1000.00	3281.00	3.13	37.63	34.34	1478.790	4851.909
1200.00	3937.20	2.78	37.00	34.41	1480.723	4858.253
1500.00	4921.50	2.39	36.30	34.49	1484.184	4869.608
2000.00	6562.00	1.96	35.53	34.59	1490.913	4891.685
2500.00	8202.50	1.72	35.10	34.63	1498.464	4916.462
3000.00	9843.00	1.57	34.83	34.66	1506.478	4942.753
4000.00	13124.00	1.50	34.70	34.67	1523.682	4999.201
4750.00	15564.75	1.45	34.61	34.68	1536.810	5042.273

HISTORICAL DATA

BT DATA

BT DATA

BT DATA

(MERGE FACTOR = 835\*10\*\*-3)

DEPTH (M)	TEMP (C)	SAL (PPT)	DEPTH (M)	TEMP (C)	SAL (PPT)	DEPTH (M)	TEMP (C)	SAL (PPT)
0.	14.80	33.16	0.	16.04	33.16	0.	14.80	33.16
20.	14.85	33.20	10.	15.78	33.17	20.	14.85	33.20
25.	14.70	33.22	20.	14.93	33.20	25.	14.70	33.22
30.	14.70	33.24	30.	13.52	33.24	30.	14.70	33.24
36.	11.03	33.28	50.	10.35	33.36	36.	11.03	33.28
42.	10.21	33.31	75.	9.00	33.44	42.	10.21	33.31
47.	10.00	33.34	100.	8.61	33.51	47.	10.00	33.34
49.	9.68	33.35	125.	8.46	33.61	49.	9.68	33.35
60.	9.10	33.39	150.	8.53	33.79	60.	9.10	33.39
69.	8.89	33.42	200.	8.28	33.96	69.	8.89	33.42
73.	8.62	33.43	250.	7.60	33.96	73.	8.62	33.43
82.	8.41	33.46	300.	6.83	33.95	82.	8.41	33.46
86.	8.15	33.47	400.	5.50	33.94	86.	8.15	33.47
91.	8.15	33.48	500.	4.65	33.99	91.	8.15	33.48
103.	7.78	33.52	600.	4.20	34.07	103.	7.78	33.52
132.	7.46	33.66	800.	3.59	34.23	132.	7.46	33.66

**B1-11**

\*\*\*\*\*ICAPS GENERATED SOUND VELOCITY PROFILE\*\*\*\*\*

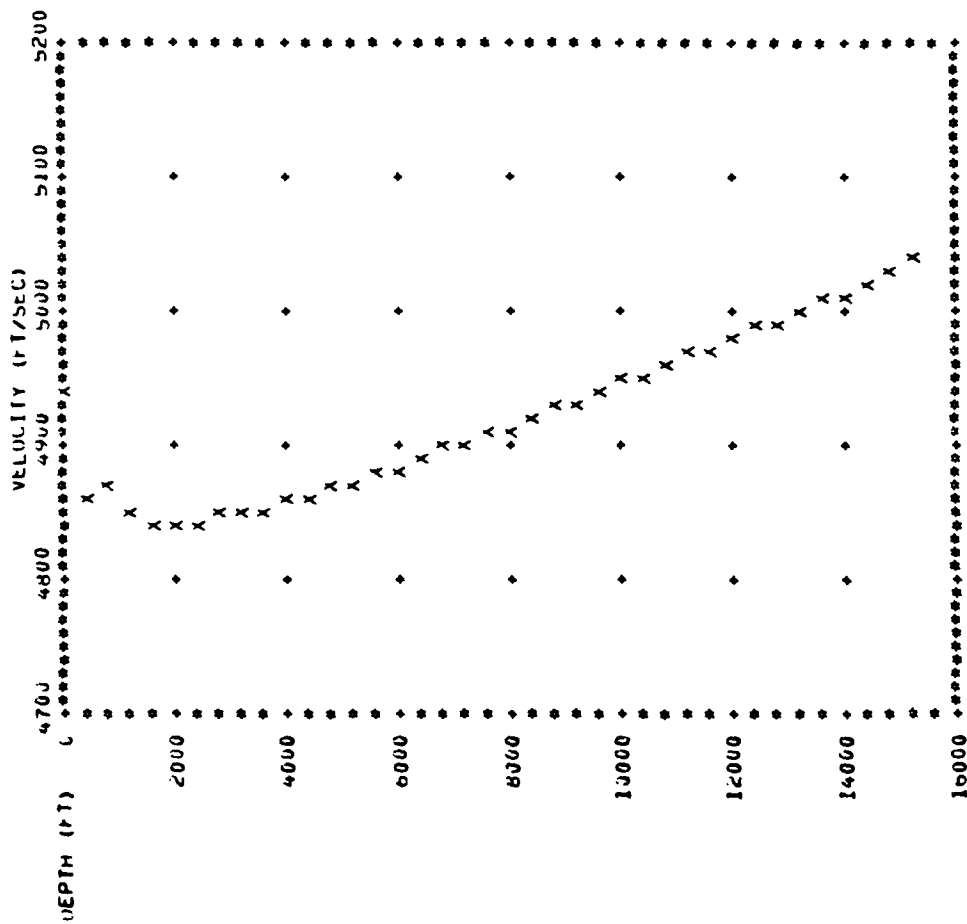
DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MI./SEC.	VELOCITY FT./SEC.
0.00	0.00	14.80	58.64	33.16	1504.495	4936.248
20.00	65.62	14.85	58.73	33.20	1505.030	4938.005
25.00	82.03	14.70	58.46	33.22	1504.655	4936.714
30.00	98.43	14.70	58.46	33.24	1504.761	4937.122
36.00	118.12	11.00	51.80	33.28	1492.481	4896.829
42.00	137.80	10.21	50.38	33.31	1489.676	4887.627
47.00	154.21	10.00	50.00	33.34	1489.031	4885.510
49.00	160.77	9.68	49.42	33.35	1487.905	4881.816
60.00	196.86	9.10	48.38	33.39	1485.981	4875.503
69.00	226.39	8.89	48.00	33.42	1485.378	4873.524
73.00	239.51	8.62	47.52	33.43	1484.441	4870.452
82.00	269.64	8.41	47.14	33.46	1483.825	4868.431
86.00	282.17	8.15	46.67	33.47	1482.913	4865.438
91.00	298.57	8.15	46.67	33.48	1483.013	4865.766
103.00	337.94	7.78	46.00	33.52	1481.835	4861.900
132.00	433.69	7.46	45.43	33.66	1481.250	4859.980
137.00	449.50	7.46	45.43	33.67	1481.340	4860.276
138.00	452.78	7.59	45.66	33.70	1481.909	4862.144
147.00	482.31	7.57	45.63	33.77	1482.064	4862.651
180.00	590.58	8.10	46.58	33.89	1484.808	4871.654
196.00	643.08	8.10	46.58	33.95	1485.141	4872.747
245.00	803.85	7.41	45.34	33.96	1483.298	4866.701
262.00	859.62	7.04	44.67	33.98	1482.127	4862.859
291.00	954.77	6.56	43.81	33.95	1480.699	4858.174
344.00	1128.66	5.98	42.76	33.95	1479.242	4853.391
429.00	1407.55	4.56	40.75	33.95	1476.352	4843.912
457.00	1499.42	4.78	40.60	33.97	1476.083	4843.029
608.00	1968.60	4.00	39.21	34.07	1475.489	4843.519
800.00	2624.80	3.45	38.22	34.23	1476.690	4845.021
1000.00	3281.00	3.03	37.46	34.34	1478.380	4850.566
1200.00	3937.20	2.71	36.88	34.41	1480.436	4857.311
1500.00	4921.50	2.35	36.23	34.49	1484.016	4869.056
2000.00	6562.00	1.94	35.50	34.59	1490.844	4891.460
2500.00	8202.50	1.71	35.08	34.63	1498.437	4916.370
3000.00	9843.00	1.57	34.82	34.66	1506.466	4942.716
4000.00	13124.00	1.50	34.70	34.67	1523.680	4999.195
4750.00	15584.75	1.45	34.61	34.67	1536.795	5042.226

BI-12

THE LAYER IS AT 65.62 FEET ( 20.00 METERS).



\*\*\*VELOCITY PROFILE\*\*\*



ICAPS: ATL. STATION 2A - FEB WIN 2

\*\*\*\*\*HISTORICAL PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MI./SEC.	VELOCITY FT./SEC.
0.00	0.00	24.51	76.12	36.54	1535.396	5037.634
10.00	32.81	24.51	76.12	36.54	1535.561	5038.175
20.00	65.62	24.51	76.12	36.55	1535.737	5038.754
30.00	98.43	24.51	76.12	36.55	1535.902	5039.296
50.00	164.05	24.45	76.01	36.59	1536.135	5040.059
75.00	246.08	24.21	75.58	36.72	1536.122	5040.017
100.00	328.10	23.31	73.96	36.86	1536.511	5034.731
125.00	410.13	21.33	70.39	36.83	1529.874	5019.516
150.00	492.15	19.47	67.05	36.68	1525.115	5003.903
200.00	656.20	16.95	62.51	36.33	1518.283	4981.488
250.00	820.25	15.22	59.40	36.03	1513.444	4965.609
300.00	984.30	13.80	56.84	35.80	1509.428	4952.435
400.00	1312.40	11.72	53.10	35.47	1503.647	4933.466
500.00	1640.50	9.95	49.91	35.22	1498.684	4917.183
600.00	1968.60	8.40	47.12	35.01	1494.308	4902.824
800.00	2624.80	6.37	43.47	34.83	1489.499	4887.046
1000.00	3281.00	5.53	41.95	34.84	1489.460	4886.918
1200.00	3937.20	5.10	41.18	34.93	1491.163	4892.505
1500.00	4921.50	4.37	39.87	34.94	1493.261	4899.389
2000.00	6562.00	3.54	38.37	34.97	1498.202	4915.601
2500.00	8202.50	3.07	37.53	34.94	1504.696	4936.907
3000.00	9843.00	2.72	36.90	34.91	1511.772	4960.125
4000.00	13124.00	2.45	36.41	34.80	1528.006	5013.389
5000.00	16405.00	2.30	36.25	34.84	1545.358	5070.321
5800.00	19629.80	2.29	36.12	34.82	1559.455	5115.573

# BI DATA

## HISTORICAL DATA

## MERGED DATA

(MIXING FACTOR = 835\*10\*\*-3)

DEPTH (M)	TEMP (C)	SAL (PPT)	DEPTH (M)	TEMP (C)	SAL (PPT)	DEPTH (M)	TEMP (C)	SAL (PPT)
0.	25.61	36.54	0.	24.51	36.54	0.	25.61	36.54
26.	25.61	36.55	10.	24.51	36.54	26.	25.61	36.55
27.	25.50	36.55	20.	24.51	36.55	27.	25.50	36.55
34.	25.45	36.57	30.	24.51	36.55	39.	25.45	36.57
79.	24.81	36.74	50.	24.45	36.59	79.	24.81	36.74
95.	23.23	36.83	75.	24.21	36.72	95.	23.23	36.83
105.	21.72	36.85	100.	23.31	36.86	105.	21.72	36.85
119.	19.49	36.84	125.	21.33	36.83	119.	19.49	36.84
148.	17.58	36.69	150.	19.47	36.68	148.	17.58	36.69
175.	15.76	36.51	200.	16.95	36.33	175.	15.76	36.51
201.	14.60	36.32	250.	15.22	36.03	201.	14.60	36.32
224.	13.64	36.14	300.	13.80	35.80	224.	13.64	36.14
250.	13.01	36.03	400.	11.72	35.47	250.	13.01	36.03
330.	11.41	35.70	500.	9.95	35.22	330.	11.41	35.70

345.	10.32	35.49
75.	7.42	35.31
600.	7.29	35.01
800.	5.60	34.83
1000.	4.99	34.84
1200.	4.72	34.93
1500.	4.15	34.99
2000.	3.45	34.97
2500.	3.03	34.94
3000.	2.71	34.91
4000.	2.45	34.86
5000.	2.36	34.84
5800.	2.29	34.84

8.40	35.01
6.	34
5.53	34.84
5.10	34.93
4.37	34.99
3.54	34.97
3.07	34.94
2.72	34.91
2.45	34.86
2.36	34.84
2.29	34.82

600.
800.
1000.
1200.
1500.
2000.
2500.
3000.
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5000.
5800.

34.49
34.49

10.32
10.32

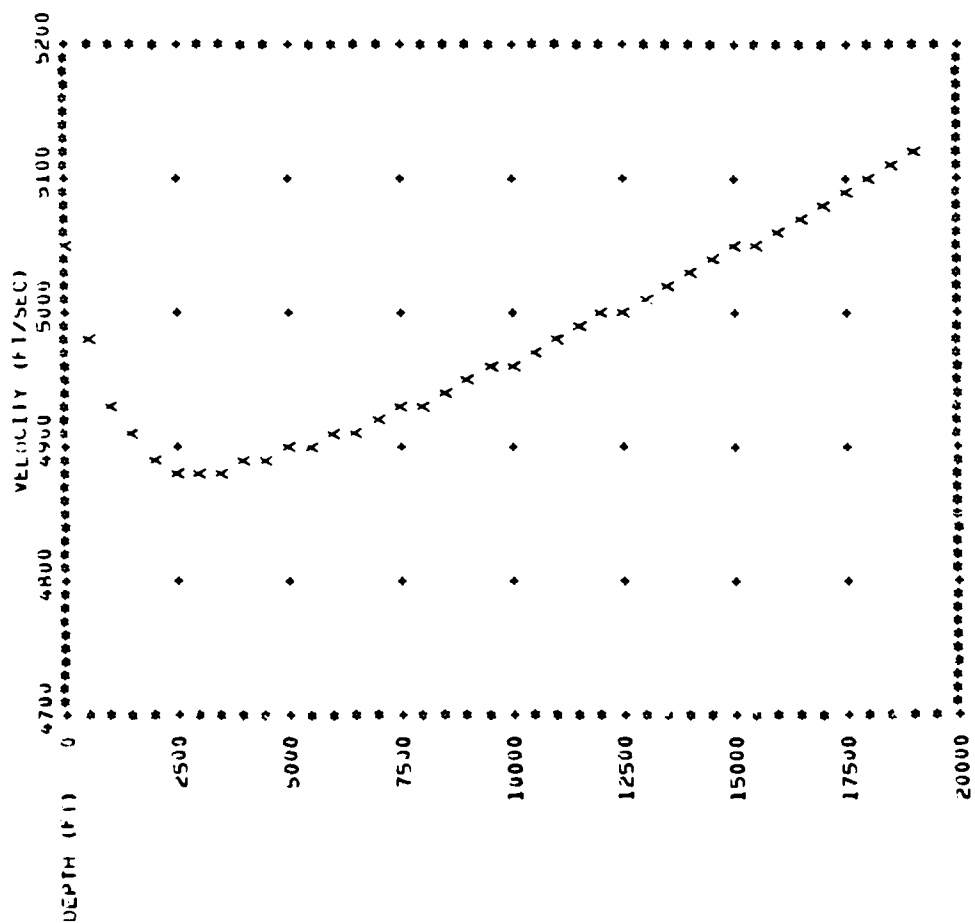
345.
345.

\*\*\*\*\*ICAPS GENERATED SOUND VELOCITY PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MI./SEC.	VELOCITY FT./SEC.
0.00	0.00	25.61	78.10	36.54	1537.965	5046.062
26.00	85.31	25.61	78.10	36.55	1538.406	5047.510
27.00	88.59	25.50	77.90	36.55	1538.169	5046.733
39.00	127.96	25.45	77.81	36.57	1538.272	5047.071
79.00	259.20	24.81	76.66	36.74	1537.637	5044.389
95.00	311.70	23.23	73.81	36.83	1534.200	5033.709
105.00	344.51	21.72	71.10	36.85	1530.584	5021.846
119.00	390.44	19.49	67.08	36.84	1524.848	5003.026
148.00	485.59	17.58	63.64	36.69	1519.728	4986.227
175.00	574.18	15.76	60.37	36.51	1514.479	4969.005
201.00	659.48	14.60	58.28	36.32	1511.042	4957.729
224.00	734.94	13.64	56.55	36.19	1508.141	4948.210
250.00	820.25	13.01	55.42	36.03	1506.286	4942.123
330.00	1082.73	11.41	52.54	35.70	1501.714	4927.122
395.00	1296.00	10.32	50.58	35.49	1498.641	4917.040
455.00	1492.86	9.42	48.96	35.33	1496.150	4908.868
600.00	1968.60	7.29	45.13	35.01	1490.059	4888.884
800.00	2624.80	5.60	42.08	34.83	1486.402	4876.884
1000.00	3281.00	4.99	40.98	34.84	1487.266	4879.719
1200.00	3937.20	4.72	40.50	34.93	1489.623	4887.452
1500.00	4921.50	4.15	39.47	34.99	1492.352	4896.408
2000.00	6562.00	3.45	38.21	34.97	1497.828	4914.374
2500.00	8202.50	3.03	37.46	34.94	1504.543	4936.406
3000.00	9643.00	2.71	36.87	34.91	1511.710	4959.921
4000.00	13124.00	2.45	36.41	34.86	1527.996	5013.356
5000.00	16405.00	2.36	36.25	34.84	1545.357	5070.316
5800.00	19029.80	2.29	36.12	34.84	1559.482	5116.661

THE LAYER IS AT 85.31 FEET ( 26.00 METERS).

\*\*\*VELOCITY PROFILE\*\*\*



ICAPS: ATL. STATION 2E - FEB

\*\*\*\*\*HISTORICAL PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MI./SEC.	VELOCITY FT./SEC.
0.00	0.00	12.42	54.36	35.70	1499.793	4920.821
10.00	32.81	12.39	54.30	35.69	1499.842	4920.980
20.00	65.62	12.34	54.28	35.69	1499.971	4921.404
30.00	98.43	12.36	54.25	35.69	1500.066	4921.717
50.00	164.05	12.32	54.18	35.69	1500.257	4922.342
75.00	246.08	12.30	54.14	35.68	1500.584	4923.417
100.00	328.10	12.27	54.09	35.68	1500.890	4924.422
125.00	410.13	12.22	54.00	35.68	1501.128	4925.203
150.00	492.15	12.16	53.89	35.67	1501.320	4925.829
200.00	656.20	12.03	53.65	35.66	1501.679	4927.010
250.00	820.25	11.85	53.33	35.63	1501.840	4927.537
300.00	964.30	11.66	52.99	35.60	1501.964	4927.943
400.00	1312.40	11.33	52.39	35.57	1502.415	4929.425
500.00	1640.50	11.02	51.84	35.54	1502.930	4931.113
600.00	1968.60	10.62	51.12	35.51	1503.117	4931.727
800.00	2624.80	9.71	49.48	35.52	1503.143	4931.814
1000.00	3261.00	8.84	47.98	35.58	1503.469	4932.882
1200.00	3937.20	7.61	45.70	35.50	1501.878	4927.660
1500.00	4921.50	5.26	41.47	35.14	1497.117	4912.039
2000.00	6562.00	3.73	36.71	34.99	1499.028	4918.309
2500.00	8202.50	3.20	37.76	34.97	1505.287	4938.847
3000.00	9843.00	2.75	37.02	34.94	1512.111	4961.236
4000.00	13124.00	2.54	36.57	34.93	1528.484	5014.955
4620.00	15158.22	2.39	36.30	34.92	1538.811	5048.839

HISTORICAL DATA

BT DATA

(MEGE FACTOR = 835\*10\*\*-3)

DEPTH (M)	TEMP (C)	SAL (PPT)	DEP (M)	TEMP (C)	SAL (PPT)	UEP (M)	TEMP (C)	SAL (PPT)
0.	10.93	35.50	0.	12.42	35.70	0.	10.93	35.50
2.	11.19	35.57	10.	12.39	35.69	2.	11.19	35.57
8.	11.40	35.63	20.	12.36	35.69	8.	11.40	35.63
268.	11.29	35.62	30.	12.36	35.69	268.	11.29	35.62
325.	11.04	35.58	50.	12.32	35.69	325.	11.04	35.58
372.	10.99	35.58	75.	12.30	35.68	372.	10.99	35.58
399.	10.75	35.55	100.	12.27	35.68	399.	10.75	35.55
425.	10.75	35.56	125.	12.22	35.68	425.	10.75	35.56
473.	10.52	35.52	150.	12.16	35.67	473.	10.52	35.52
493.	10.55	35.54	200.	12.03	35.66	493.	10.55	35.54
			250.	11.85	35.63	600.	10.21	35.51
			300.	11.66	35.60	800.	9.42	35.52
			400.	11.33	35.57	1000.	8.68	35.58
			500.	11.02	35.54	1200.	7.47	35.50
			600.	10.62	35.51	1500.	5.18	35.14
			800.	9.71	35.52	2000.	3.70	36.00

100.	1.04	35.58	2500.	3.19	34.91
1200.	1.04	35.58	000.	2.7	34.
1500.	5.26	35.14	4000.	2.54	34.93
2000.	3.73	34.99	4620.	2.39	34.93
2500.	3.20	34.97			
3000.	2.79	34.94			
4000.	2.54	34.93			
4620.	2.39	34.92			

\*\*\*\*\*ICAPS GENERATED SOUND VELOCITY PROFILE\*\*\*\*\*

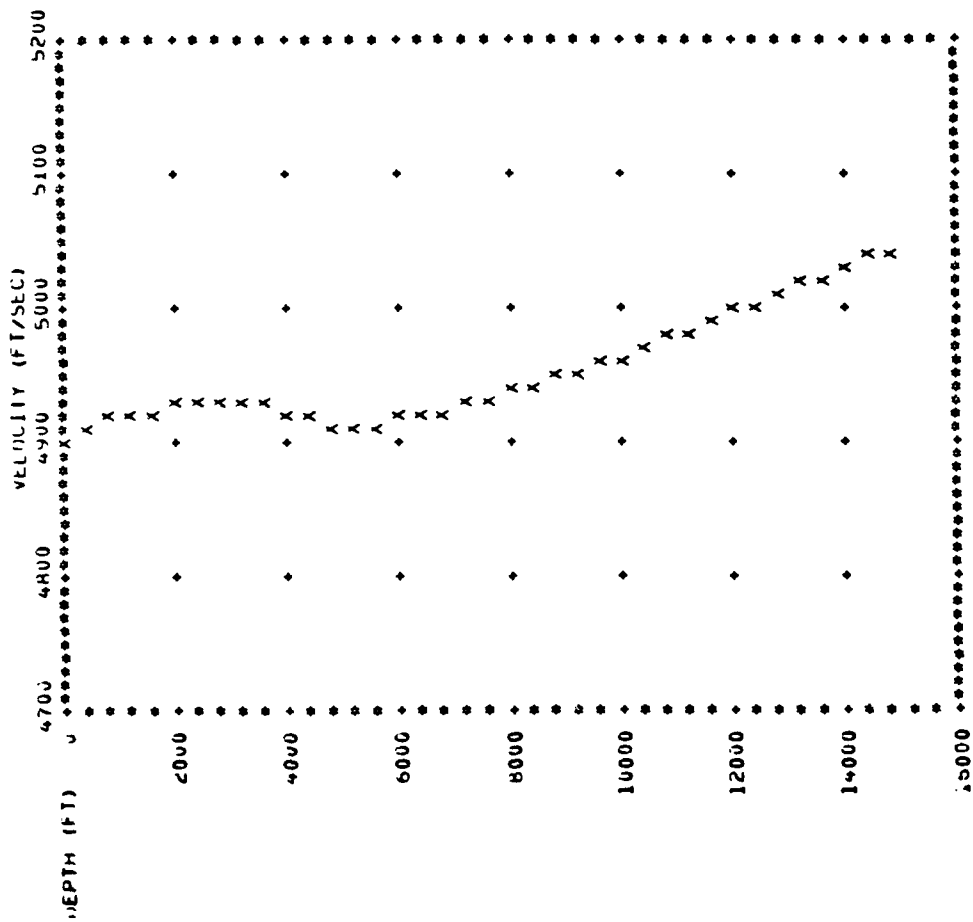
DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY M1./SEC.	VELOCITY F1./SEC.
0.00	0.00	10.93	51.67	35.50	1494.365	4903.010
2.00	6.56	11.19	52.14	35.51	1495.409	4906.436
4.00	13.12	11.40	52.52	35.63	1496.323	4909.435
6.00	19.68	11.29	52.32	35.62	1500.173	4922.067
8.00	26.25	11.04	51.87	35.58	1500.174	4922.072
10.00	32.81	10.99	51.78	35.58	1500.770	4924.027
12.00	39.37	10.75	51.35	35.55	1500.326	4922.569
14.00	45.94	10.75	51.35	35.56	1500.769	4924.024
16.00	52.50	10.52	50.94	35.52	1500.686	4923.751
18.00	59.06	10.55	50.99	35.54	1501.147	4925.265
20.00	65.62	10.21	50.38	35.51	1501.644	4926.894
22.00	72.18	9.42	48.96	35.52	1502.094	4928.370
24.00	78.74	8.68	47.62	35.58	1502.723	4930.434
26.00	85.30	7.47	45.45	35.50	1501.341	4925.901
28.00	91.86	5.18	41.32	35.14	1496.787	4910.959
30.00	98.42	3.70	38.65	34.99	1498.690	4917.857
32.00	104.98	3.19	37.74	34.97	1505.231	4938.662
34.00	111.54	2.78	37.01	34.94	1512.088	4961.161
36.00	118.10	2.54	36.57	34.93	1528.480	5014.943
38.00	124.66	2.39	36.30	34.93	1538.824	5048.880

B1-20

THE LAYER IS AT 3281.00 FEET ( 1000.05 METERS).



\*\*\*VELOCITY PROFILE\*\*\*



CAPE: ATL. STATION 22 - AUG

\*\*\*\*\*HISTORICAL PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MI./SEC.	VELOCITY FT./SEC.
0.00	0.00	17.49	63.48	35.66	1515.796	4973.325
10.00	32.81	17.16	62.89	35.65	1514.972	4970.625
20.00	65.62	16.81	62.28	35.65	1514.092	4967.735
30.00	98.43	16.09	60.96	35.65	1512.073	4961.112
50.00	164.05	14.36	57.85	35.65	1506.966	4944.357
75.00	246.08	13.04	55.54	35.65	1503.178	4931.928
100.00	328.10	12.47	54.45	35.64	1501.521	4926.490
125.00	410.13	12.21	53.98	35.63	1501.031	4924.883
150.00	492.15	12.01	53.62	35.62	1500.742	4923.933
200.00	656.20	11.75	53.15	35.60	1500.637	4923.591
250.00	820.25	11.59	52.86	35.58	1500.876	4924.373
300.00	984.30	11.43	52.57	35.57	1501.125	4925.190
400.00	1312.40	11.12	52.02	35.54	1501.640	4926.879
500.00	1640.50	10.80	51.44	35.51	1502.112	4928.431
600.00	1968.60	10.41	50.74	35.49	1502.340	4929.177
800.00	2624.80	9.67	49.41	35.50	1503.049	4931.504
1000.00	3281.00	8.75	47.75	35.58	1502.984	4931.289
1200.00	3937.20	7.50	45.50	35.47	1501.414	4926.140
1500.00	4921.50	5.07	41.13	35.13	1496.329	4909.457
2000.00	6562.00	3.65	38.57	34.96	1498.651	4917.073
2500.00	8202.50	3.20	37.76	34.95	1505.260	4938.757
3000.00	9843.00	2.86	37.15	34.94	1512.408	4962.210
4000.00	13124.00	2.57	36.63	34.91	1528.583	5015.280
4620.00	15158.22	2.39	36.30	34.89	1538.770	5048.704

MERGED DATA

HISTORICAL DATA

(MERGE FACTOR = 835\*10\*\*-3)

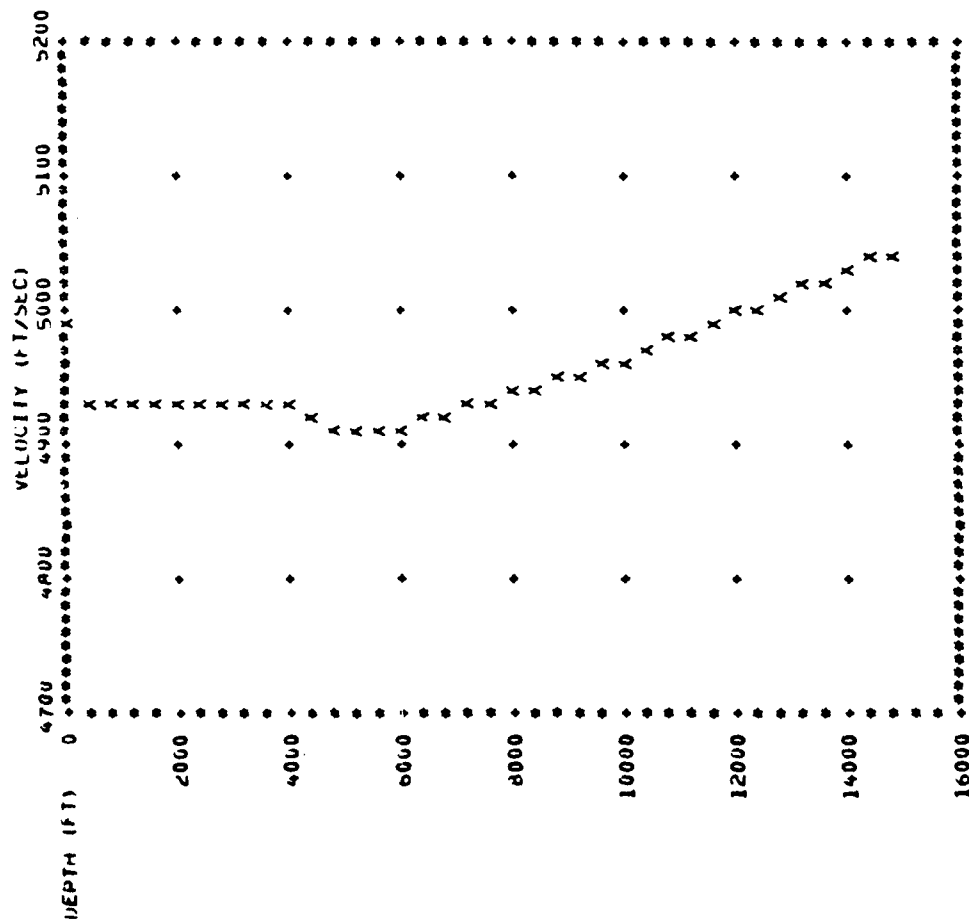
DEPTH (M)	TEMP (C)	SAL (PPT)	DEP (M)	TEMP (C)	SAL (PPT)	DEP (M)	TEMP (C)	SAL (PPT)
0.	19.00	35.66	0.	17.49	35.66	0.	19.00	35.64
22.	19.00	35.65	10.	17.16	35.65	22.	19.00	35.65
27.	18.80	35.65	20.	16.81	35.65	27.	18.80	35.65
29.	17.10	35.65	30.	16.09	35.65	29.	17.10	35.65
32.	16.90	35.65	40.	14.36	35.65	32.	16.90	35.65
33.	16.40	35.65	75.	13.08	35.65	33.	16.40	35.65
37.	15.30	35.65	100.	12.47	35.64	37.	15.30	35.65
38.	14.90	35.65	125.	12.21	35.63	38.	14.90	35.65
40.	14.70	35.65	150.	12.01	35.62	40.	14.70	35.65
50.	14.40	35.65	200.	11.75	35.60	50.	14.40	35.65
53.	14.10	35.65	250.	11.59	35.58	53.	14.10	35.65
60.	13.70	35.65	300.	11.43	35.57	60.	13.70	35.65
122.	13.00	35.63	400.	11.12	35.54	122.	13.00	35.63
165.	12.60	35.51	500.	10.80	35.51	165.	12.60	35.59
192.	12.60	35.60	600.	10.41	35.49	192.	12.60	35.60
207.	12.50	35.56	800.	9.67	35.56	207.	12.50	35.60

243.	12.00	35.52	1200.	7.50	35.47	243.	12.00	35.52
.	10	50	151	3	3	285.	12.00	35.52
244.	11.90	35.52	2000.	3.65	34.96	294.	11.90	35.52
335.	11.90	35.52	2500.	3.20	34.95	335.	11.90	35.52
414.	11.20	35.54	3000.	2.80	34.94	414.	11.20	35.54
	11.20	35.51	4000.	2.57	34.91		10.90	35.51
		35.49	4620.	2.39	34.89		10.50	35.49
		35.56					9.73	35.56
		35.58					8.79	35.58
		35.47					7.53	35.47
		35.13					5.09	35.13
		34.96					3.66	34.96
		34.95					3.20	34.95
		34.94					2.86	34.94
		34.91					2.57	34.91
		34.91					2.39	34.91

\*\*\*\*\*ICAPS GENERATED SOUND VELOCITY PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
0.00	0.00	19.00	66.20	35.64	1520.108	4987.476
22.00	72.18	19.00	66.20	35.65	1520.484	4988.707
27.00	88.59	18.80	65.84	35.65	1520.002	4987.127
29.00	95.15	17.10	62.78	35.65	1515.105	4971.060
32.00	104.99	16.90	62.42	35.65	1514.558	4969.264
33.00	108.27	16.40	61.52	35.65	1513.067	4964.574
37.00	121.40	15.30	59.54	35.65	1509.760	4953.457
38.00	124.68	14.90	58.82	35.65	1508.495	4949.374
40.00	131.24	14.70	58.46	35.65	1507.892	4947.395
50.00	164.05	14.40	57.92	35.65	1507.095	4944.779
53.00	173.89	14.10	57.38	35.65	1506.175	4941.761
66.00	216.55	13.70	56.66	35.65	1505.043	4938.177
122.00	400.28	13.00	55.40	35.65	1503.656	4933.494
165.00	541.37	12.60	54.68	35.59	1502.962	4931.219
192.00	629.95	12.60	54.68	35.60	1503.420	4932.721
207.00	679.17	12.50	54.50	35.60	1503.319	4932.390
214.00	702.13	12.20	53.96	35.59	1502.408	4929.402
243.00	797.28	12.00	53.60	35.55	1502.136	4928.508
285.00	935.09	12.00	53.60	35.56	1502.840	4930.819
294.00	964.61	11.90	53.42	35.55	1502.628	4930.123
335.00	1099.14	11.90	53.42	35.56	1503.317	4932.382
414.00	1358.33	11.20	52.16	35.54	1502.146	4928.540
500.00	1640.50	10.90	51.63	35.51	1502.482	4929.644
600.00	1968.60	10.50	50.89	35.49	1502.652	4930.200
800.00	2624.80	9.73	49.52	35.50	1503.271	4932.231
1000.00	3281.00	8.79	47.83	35.58	1503.142	4931.808
1200.00	3937.20	7.53	45.55	35.47	1501.528	4926.573
1500.00	4921.50	5.09	41.16	35.13	1496.400	4909.687
2000.00	6562.00	3.66	38.58	34.90	1498.680	4917.169
2500.00	8202.50	3.20	37.77	34.95	1505.272	4938.796
3000.00	9843.00	2.85	37.15	34.94	1512.413	4962.226
4000.00	13124.00	2.57	36.63	34.91	1528.584	5015.283
4620.00	15158.22	2.39	36.30	34.91	1538.798	5048.795

\*\*\*VELOCITY PROFILE\*\*\*



ICAPS: ATL. STATION 2H - FEB WIN 1

\*\*\*\*\*HISTORICAL PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY M/SEC.	VELOCITY FT./SEC.
0.00	0.00	3.32	37.98	32.41	1460.472	4791.807
10.00	32.81	3.38	38.08	32.46	1460.460	4793.411
20.00	65.62	3.47	38.25	32.51	1461.577	4795.435
30.00	98.43	3.63	38.53	32.59	1462.533	4798.570
40.00	131.24	3.82	39.08	32.79	1465.208	4807.348
50.00	164.05	4.12	39.42	33.22	1469.950	4822.905
60.00	196.86	4.50	41.04	33.68	1475.170	4840.034
70.00	229.67	4.97	42.84	34.06	1479.073	4852.838
80.00	262.48	5.52	44.24	34.31	1481.266	4860.033
90.00	295.29	6.17	44.91	34.59	1483.000	4865.722
100.00	328.10	6.80	45.16	34.77	1482.413	4863.797
110.00	360.91	7.51	45.52	34.90	1481.468	4860.696
120.00	393.72	8.29	46.92	34.88	1478.613	4851.330
130.00	426.53	9.17	48.51	34.91	1478.332	4850.408
140.00	459.34	10.17	50.31	34.93	1479.101	4852.930
150.00	492.15	11.29	52.33	34.95	1481.151	4859.656
160.00	524.96	12.52	54.56	34.95	1483.514	4867.409
170.00	557.77	13.87	56.97	34.95	1486.137	4876.016
180.00	590.58	15.34	59.61	34.95	1490.408	4890.028
190.00	623.39	16.93	62.48	34.95	1497.627	4913.713
200.00	656.20	18.64	65.55	34.95	1504.794	4937.230
210.00	689.01	20.47	68.85	34.92	1511.275	4958.494

B1-26

MERGED DATA

HISTORICAL DATA

MERGE FACTOR = 835\*10\*\*-3)

DEPTH (M)	TEMP (C)	SAL (PPT)	DEP (M)	TEMP (C)	SAL (PPT)	DEP (M)	TEMP (C)	SAL (PPT)	DEP (M)	TEMP (C)	SAL (PPT)
0.	12.86	32.41	0.	3.32	32.41	0.	12.86	32.41	0.	12.86	32.41
10.	13.09	32.49	10.	3.38	32.46	10.	13.09	32.49	10.	13.09	32.49
20.	13.09	32.57	20.	3.47	32.51	20.	13.09	32.57	20.	13.09	32.57
30.	13.14	32.60	30.	3.63	32.59	30.	13.14	32.60	30.	13.14	32.60
40.	13.41	32.66	40.	4.12	32.79	40.	13.41	32.66	40.	13.41	32.66
50.	13.68	32.77	50.	5.02	33.22	50.	13.68	32.77	50.	13.68	32.77
60.	13.96	33.13	60.	6.05	33.68	60.	13.96	33.13	60.	13.96	33.13
70.	14.11	33.53	70.	7.17	34.31	70.	14.11	33.53	70.	14.11	33.53
80.	14.11	33.74	80.	7.31	34.59	80.	14.11	33.74	80.	14.11	33.74
90.	14.57	34.94	90.	8.89	34.77	90.	14.57	34.94	90.	14.57	34.94
100.	15.05	34.04	100.	6.40	34.90	100.	15.05	34.04	100.	15.05	34.04
110.	13.92	34.25	110.	5.29	34.88	110.	13.92	34.25	110.	13.92	34.25
120.	13.37	34.28	120.	4.81	34.91	120.	13.37	34.28	120.	13.37	34.28
130.	13.50	34.32	130.	4.59	34.93	130.	13.50	34.32	130.	13.50	34.32
140.	13.29	34.39	140.	4.28	34.95	140.	13.29	34.39	140.	13.29	34.39
150.	13.54	34.47	150.	4.05	34.95	150.	13.54	34.47	150.	13.54	34.47
160.	13.40	34.51	160.	3.88	34.95	160.	13.40	34.51	160.	13.40	34.51

246.	0	57	200"	3.41	34.95	221.	12.50	34.67
263.	11.53	34.76	2500.	3.57	34.95	246.	1.9	34.
290.	11.53	34.80	3000.	2.60	34.92	263.	11.53	34.80
302.	11.14	34.87	4000.	2.57	34.91	290.	11.14	34.87
345.	10.39	34.90	4620.	2.39	34.89	302.	10.39	34.90
393.	9.20	34.89	5800.	2.29	34.82	345.	9.20	34.89
404.	8.61	34.88	0.	0.00	0.00	393.	8.61	34.88
424.	8.22	34.88	0.	0.00	0.00	404.	8.22	34.88
463.	7.89	34.89	0.	0.00	0.00	424.	7.89	34.89
505.	7.37	34.90	0.	0.00	0.00	460.	7.37	34.90
	6.94	34.91	0.	0.00	0.00	505.	6.94	34.91
						600.	6.38	34.93
						800.	5.53	34.95
						1000.	4.92	34.95
						1200.	4.49	34.95
						1500.	4.05	34.95
						2000.	3.55	34.95
						2500.	3.15	34.95
						3000.	2.62	34.95

\*\*\*\*\*ICAPS GENERATED SOUND VELOCITY PROFILE\*\*\*\*\*

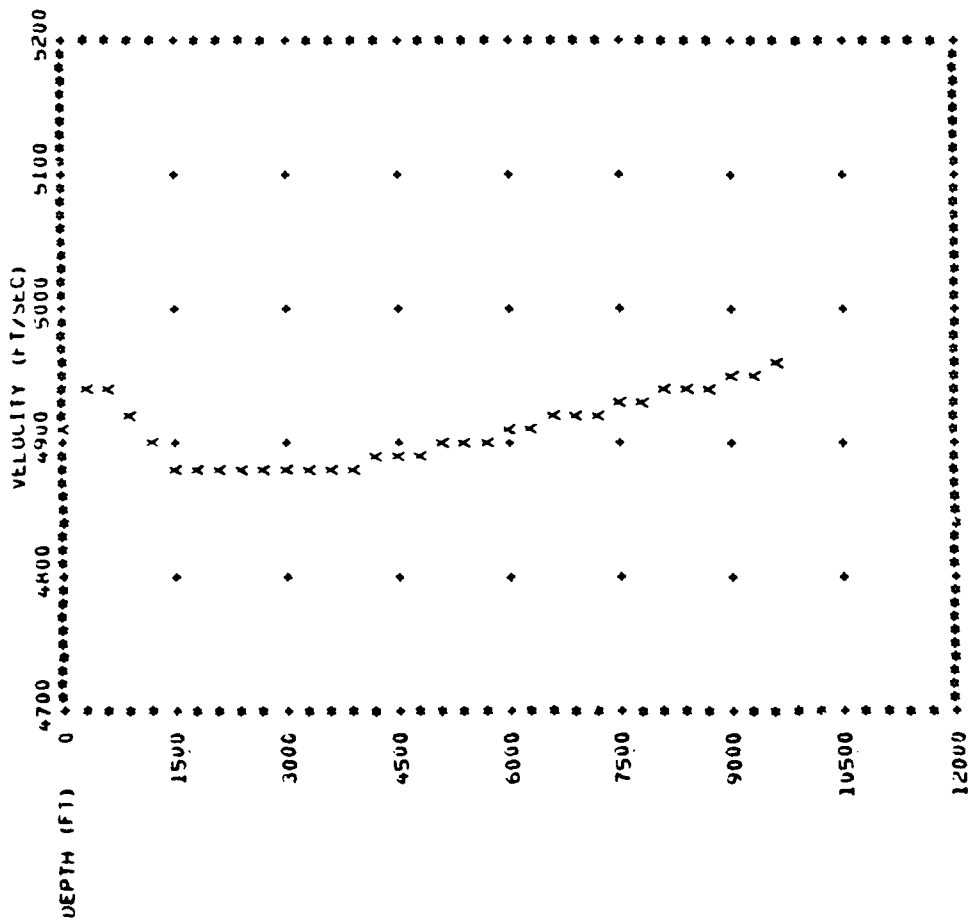
DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MI./SEC.	VELOCITY FT./SEC.
0.00	0.00	12.86	55.15	32.41	1497.166	4912.200
16.00	52.50	13.09	55.56	32.49	1498.304	4915.936
30.00	98.43	13.09	55.56	32.57	1498.634	4917.019
35.00	114.84	13.14	55.65	32.60	1498.916	4917.944
39.00	127.96	13.41	56.14	32.68	1499.989	4921.464
48.00	157.49	13.68	56.62	32.77	1501.146	4925.259
70.00	229.67	13.96	57.13	33.13	1502.879	4930.945
85.00	278.69	13.96	57.13	33.40	1503.457	4932.844
92.00	301.35	14.11	57.40	33.53	1504.222	4935.353
104.00	341.22	14.11	57.40	33.74	1504.575	4936.839
122.00	400.28	14.57	58.23	33.94	1506.710	4943.516
128.00	419.97	15.05	59.09	34.09	1508.524	4949.467
144.00	472.46	13.92	57.06	34.25	1505.338	4939.015
147.00	482.31	13.37	56.07	34.28	1503.609	4933.340
151.00	495.43	13.50	56.30	34.32	1504.150	4935.117
171.00	561.05	13.29	55.92	34.39	1503.870	4934.197
178.00	584.02	13.54	56.37	34.47	1504.913	4937.618
186.00	610.27	13.40	56.12	34.51	1504.635	4936.708
196.00	649.64	13.40	56.12	34.58	1504.915	4937.627
221.00	725.10	12.50	54.50	34.67	1502.375	4929.292
246.00	807.13	11.95	53.51	34.76	1501.012	4924.821
263.00	862.90	11.53	52.75	34.80	1499.493	4921.149
290.00	951.49	11.14	52.05	34.87	1499.056	4918.401
302.00	990.66	10.39	50.70	34.90	1496.612	4910.386
345.00	1131.95	9.20	48.56	34.89	1492.957	4898.393
393.00	1289.43	8.61	47.50	34.88	1491.527	4893.700
404.00	1325.52	8.22	46.80	34.88	1490.231	4889.449
424.00	1391.14	7.89	46.20	34.89	1489.308	4886.418
460.00	1509.26	7.37	45.27	34.90	1487.907	4881.823
505.00	1656.91	6.94	44.49	34.91	1486.987	4878.803
600.00	1968.60	6.34	43.48	34.93	1486.357	4876.738
800.00	2624.80	5.53	41.95	34.95	1486.274	4876.465
1000.00	3281.00	4.92	40.85	34.95	1487.117	4879.230
1200.00	3937.20	4.49	40.07	34.95	1488.664	4884.306
1500.00	4921.50	4.05	39.29	34.95	1491.886	4894.879
2000.00	6562.00	3.55	38.40	34.95	1498.230	4915.693
2500.00	8202.50	3.15	37.67	34.95	1505.040	4938.038
3000.00	9843.00	2.62	36.72	34.95	1511.417	4958.960

BI-28

THE LAYER IS AT 419.77 FEET ( 128.01 METERS).



\*\*\*VELOCITY PROFILE\*\*\*



ICAPPS: MED. STATION JA - AUG

\*\*\*\*\*HISTORICAL PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
0.00	0.00	25.05	77.09	38.68	1539.076	5049.709
10.00	32.81	24.46	76.03	38.69	1537.877	5045.774
20.00	65.62	22.85	73.13	38.63	1534.092	5033.355
30.00	98.43	20.45	68.81	38.56	1528.024	5013.447
50.00	164.05	17.46	63.43	38.55	1520.021	4987.189
75.00	246.08	16.03	60.85	38.65	1516.303	4974.990
100.00	328.10	15.44	59.79	38.72	1514.993	4970.692
125.00	410.13	15.20	59.36	38.77	1514.721	4969.800
150.00	492.15	15.04	59.07	38.81	1514.682	4969.672
200.00	656.20	14.85	58.73	38.85	1514.957	4970.573
250.00	820.25	14.68	58.42	38.86	1515.255	4971.551
300.00	984.30	14.53	58.15	38.86	1515.601	4972.688
400.00	1312.40	14.28	57.70	38.84	1516.424	4975.388
500.00	1640.50	14.09	57.36	38.82	1517.436	4978.709
600.00	1968.60	13.94	57.09	38.79	1518.564	4982.408
800.00	2624.80	13.78	56.80	38.76	1521.311	4991.420
1000.00	3281.00	13.70	56.66	38.74	1524.337	5001.348
1200.00	3937.20	13.66	56.59	38.72	1527.501	5011.730
1500.00	4921.50	13.66	56.59	38.71	1532.484	5028.081
2000.00	6562.00	13.67	56.61	38.69	1540.862	5055.569
2500.00	8202.50	13.67	56.61	38.68	1549.275	5083.170
3000.00	9843.00	13.71	56.68	38.65	1557.843	5111.284

MERGED DATA

HISTORICAL DATA

(MERGE FACTOR = 700\*10\*\*-3)

BT DATA

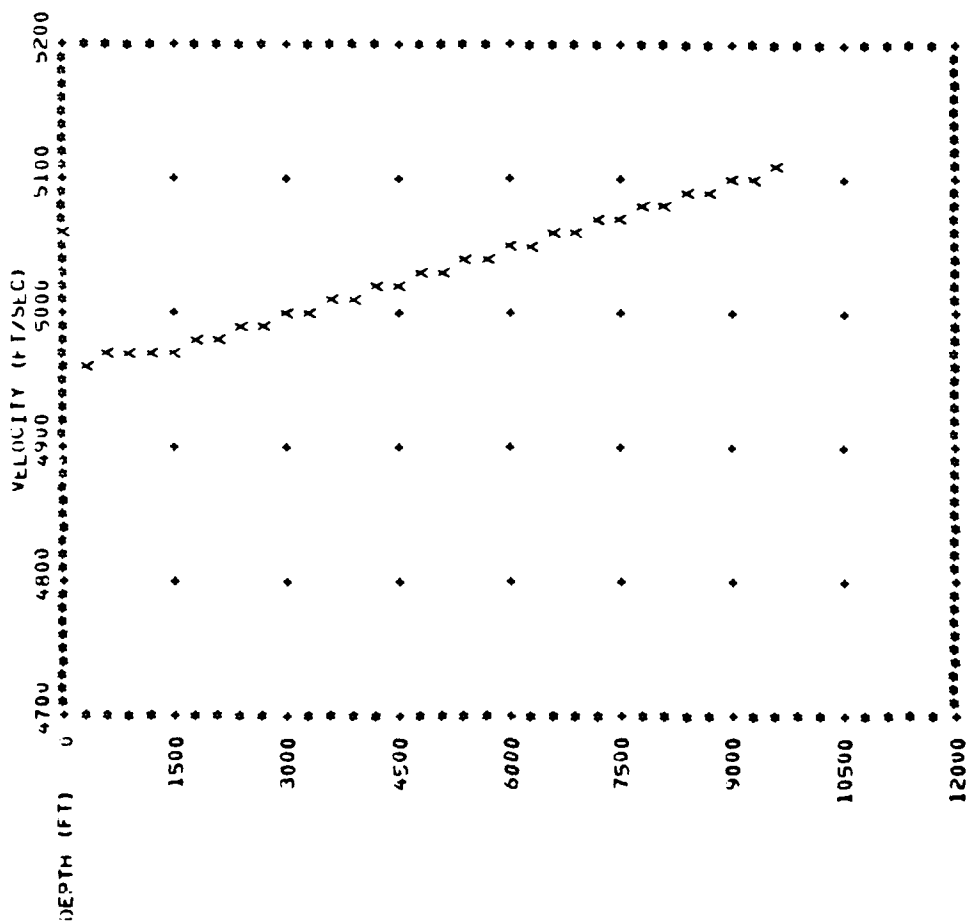
DEPTH (M)	TEMP (C)	SAL (PPT)	DEP (M)	TEMP (C)	SAL (PPT)	DEP (M)	TEMP (C)	SAL (PPT)
0.	26.24	38.68	0.	25.05	38.68	0.	26.24	38.68
18.	26.14	38.64	10.	24.46	38.69	18.	26.14	38.64
22.	21.97	38.62	20.	22.85	38.63	22.	21.97	38.62
29.	19.19	38.57	30.	20.45	38.56	29.	19.19	38.57
35.	17.68	38.56	50.	17.46	38.55	35.	17.68	38.56
41.	16.62	38.55	75.	16.03	38.65	41.	16.62	38.55
46.	15.91	38.55	100.	15.44	38.72	46.	15.91	38.55
49.	15.81	38.55	125.	15.20	38.77	49.	15.81	38.55
51.	15.55	38.55	150.	15.04	38.81	51.	15.55	38.55
59.	15.00	38.59	200.	14.85	38.85	59.	15.00	38.59
68.	14.75	38.62	250.	14.68	38.86	68.	14.75	38.62
77.	14.70	38.63	300.	14.53	38.86	77.	14.70	38.63
84.	14.82	38.64	400.	14.28	38.84	84.	14.82	38.64
135.	14.65	38.74	500.	14.09	38.82	135.	14.65	38.74
170.	14.65	38.83	600.	13.94	38.79	170.	14.65	38.83
215.	14.65	38.85	800.	13.78	38.76	215.	14.65	38.85
253.	14.39	38.86	1000.	13.70	38.74	253.	14.39	38.86
275.	14.39	38.86	1200.	13.66	38.72	275.	14.39	38.86

286.	14.24	38.86	1500.	13.66	38.71	286.	14.2	38.
370.	14.04	38.82	2000.	13.67	38.69	370.	14.04	38.82
434.	14.04	38.83	2500.	13.67	38.68	434.	14.04	38.83
443.	13.94	38.83	3000.	13.71	38.65	443.	13.94	38.83
	13.94	38.83	4000.	2.57	34.91	500.	13.91	38.82
						500.	13.91	38.82
						600.	13.81	38.79
						800.	13.72	38.76
						1000.	13.67	38.74
						1200.	13.65	38.72
						1500.	13.65	38.71
						2000.	13.67	38.69
						2500.	13.67	38.68
						3000.	13.71	38.68

\*\*\*\*\*ICAPS GENERATED SOUND VELOCITY PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MI./SEC.	VELOCITY FT./SEC.
0.00	0.00	26.24	79.23	38.68	1541.780	5058.581
18.00	59.06	26.14	79.05	38.64	1541.812	5058.686
22.00	72.18	21.97	71.55	38.62	1531.906	5026.182
29.00	95.15	19.19	66.54	38.57	1524.602	5002.219
35.00	114.84	17.68	63.82	38.56	1520.422	4988.506
41.00	134.52	16.62	61.92	38.55	1517.404	4978.603
46.00	150.93	15.91	60.64	38.55	1515.342	4971.838
49.00	160.77	15.81	60.46	38.55	1515.085	4970.952
51.00	167.33	15.51	59.92	38.55	1514.201	4968.093
59.00	193.58	15.06	59.00	38.59	1512.788	4963.457
68.00	223.21	14.75	58.55	38.62	1512.195	4961.512
77.00	254.64	14.70	58.46	38.63	1512.192	4961.502
84.00	275.60	14.82	58.68	38.68	1512.744	4963.312
135.00	442.94	14.85	58.73	38.79	1513.811	4966.815
170.00	557.77	14.65	58.37	38.83	1513.805	4966.795
215.00	705.42	14.65	58.37	38.85	1514.577	4969.327
253.00	830.09	14.39	57.90	38.86	1514.385	4968.697
275.00	902.28	14.39	57.90	38.86	1514.746	4969.882
286.00	938.37	14.24	57.63	38.86	1514.448	4968.905
370.00	1213.97	14.04	57.27	38.82	1515.138	4971.167
434.00	1423.95	14.04	57.27	38.83	1516.206	4974.672
443.00	1453.48	13.94	57.09	38.83	1516.030	4974.094
500.00	1640.50	13.91	57.04	38.82	1516.854	4976.799
600.00	1968.60	13.81	56.86	38.79	1518.155	4981.066
800.00	2624.80	13.72	56.69	38.76	1521.109	4990.760
1000.00	3281.00	13.67	56.61	38.74	1524.238	5001.024
1200.00	3937.20	13.65	56.56	38.72	1527.452	5011.571
1500.00	4921.50	13.65	56.56	38.71	1532.468	5028.026
2000.00	6562.00	13.67	56.60	38.69	1540.860	5055.560
2500.00	8202.50	13.67	56.61	38.68	1549.274	5083.168
3000.00	9943.00	13.71	56.68	38.68	1557.881	5111.409

\*\*\*VELOCITY PROFILE\*\*\*



APPENDIX B

Section B2

ICAPS Environmental Profiles and Detailed BT Data  
(Different Water Mass Selections)

ICAPS: ATL. STATION 2A - FEB WIN 1

\*\*\*\*\*HISTORICAL PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
0.00	0.00	25.39	77.70	35.91	1536.754	5042.089
10.00	32.81	25.38	77.68	35.90	1536.885	5042.518
20.00	65.62	25.37	77.67	35.89	1537.015	5042.948
30.00	98.43	25.35	77.63	35.89	1537.134	5043.337
50.00	164.05	25.31	77.56	35.91	1537.394	5044.190
75.00	246.28	24.62	76.32	36.08	1536.377	5040.852
100.00	328.10	21.35	70.43	36.22	1528.804	5016.007
125.00	410.13	18.15	64.67	36.02	1520.195	4987.761
150.00	492.15	15.74	60.33	35.83	1513.180	4964.742
200.00	656.20	13.29	55.92	35.58	1505.834	4940.643
250.00	820.25	11.61	52.90	35.32	1500.615	4923.516
300.00	984.30	10.61	51.10	35.17	1497.716	4914.005
400.00	1312.40	9.32	48.78	34.98	1494.420	4903.193
500.00	1640.50	8.44	47.19	34.90	1492.669	4897.446
600.00	1968.60	7.54	45.57	34.83	1490.782	4891.256
800.00	2624.80	6.14	43.05	34.73	1488.449	4883.601
1000.00	3281.00	5.36	41.65	34.77	1488.676	4884.346
1200.00	3937.20	4.98	40.96	34.86	1490.577	4890.584
1500.00	4921.50	4.42	39.96	34.96	1493.427	4899.935
2000.00	6562.00	3.54	38.37	34.97	1498.202	4915.601
2500.00	8202.50	3.06	37.51	34.94	1504.654	4936.768
3000.00	9843.00	2.86	37.13	34.92	1512.338	4961.981
4000.00	13124.00	2.40	36.32	34.89	1527.836	5012.830
5000.00	16405.60	2.10	35.78	34.86	1544.294	5066.829
5800.00	19029.80	1.86	35.35	34.84	1557.694	5110.794

HISTORICAL DATA

BT DATA

(MERGE FACTOR = 835\*10\*\*-3)

DEPTH (M)	TEMP (C)	SAL (PPT)	DEP (M)	TEMP (C)	SAL (PPT)	DEP (M)	TEMP (C)	SAL (PPT)	DEP (M)	TEMP (C)	SAL (PPT)
0.	25.61	35.88	0.	25.39	35.91	0.	25.61	35.88	0.	25.61	35.88
26.	25.61	35.89	10.	25.38	35.90	26.	25.61	35.89	26.	25.61	35.89
27.	25.50	35.89	20.	25.37	35.89	27.	25.50	35.89	27.	25.50	35.89
39.	25.45	35.90	30.	25.35	35.89	39.	25.45	35.90	39.	25.45	35.90
79.	24.81	36.10	50.	25.31	35.91	79.	24.81	36.10	79.	24.81	36.10
95.	23.23	36.19	75.	24.62	36.08	95.	23.23	36.19	95.	23.23	36.19
105.	21.72	36.18	100.	21.35	36.22	105.	21.72	36.18	105.	21.72	36.18
119.	19.49	36.07	125.	18.15	36.02	119.	19.49	36.07	119.	19.49	36.07
148.	17.58	35.85	150.	15.74	35.83	148.	17.58	35.85	148.	17.58	35.85
175.	15.76	35.71	200.	13.29	35.58	175.	15.76	35.71	175.	15.76	35.71
201.	14.60	35.57	250.	11.61	35.32	201.	14.60	35.57	201.	14.60	35.57
224.	13.64	35.46	300.	10.61	35.17	224.	13.64	35.46	224.	13.64	35.46
250.	13.01	35.32	400.	9.32	34.98	250.	13.01	35.32	250.	13.01	35.32
310.	11.41	35.11	500.	8.44	34.90	310.	11.41	35.11	310.	11.41	35.11

395.	10.32	34.99
5.	.42	1.94
600.	4.03	34.83
800.	6.48	34.73
1000.	5.60	34.77
1200.	5.15	34.86
1500.	4.52	34.96
2000.	3.58	34.97
2500.	3.08	34.94
3000.	2.85	34.92
4000.	2.40	34.89
5000.	2.10	34.86
5800.	1.86	34.86

34.83	7.54	600.
34.	6.	800.
34.77	5.36	1000.
34.86	4.98	1200.
34.96	4.42	1500.
34.97	3.54	2000.
34.94	3.06	2500.
34.92	2.85	3000.
34.89	2.40	4000.
34.86	2.10	5000.
34.84	1.86	5800.

395.	10.32	34.99
5.		
600.		
800.		
1000.		
1200.		
1500.		
2000.		
2500.		
3000.		
4000.		
5000.		
5800.		



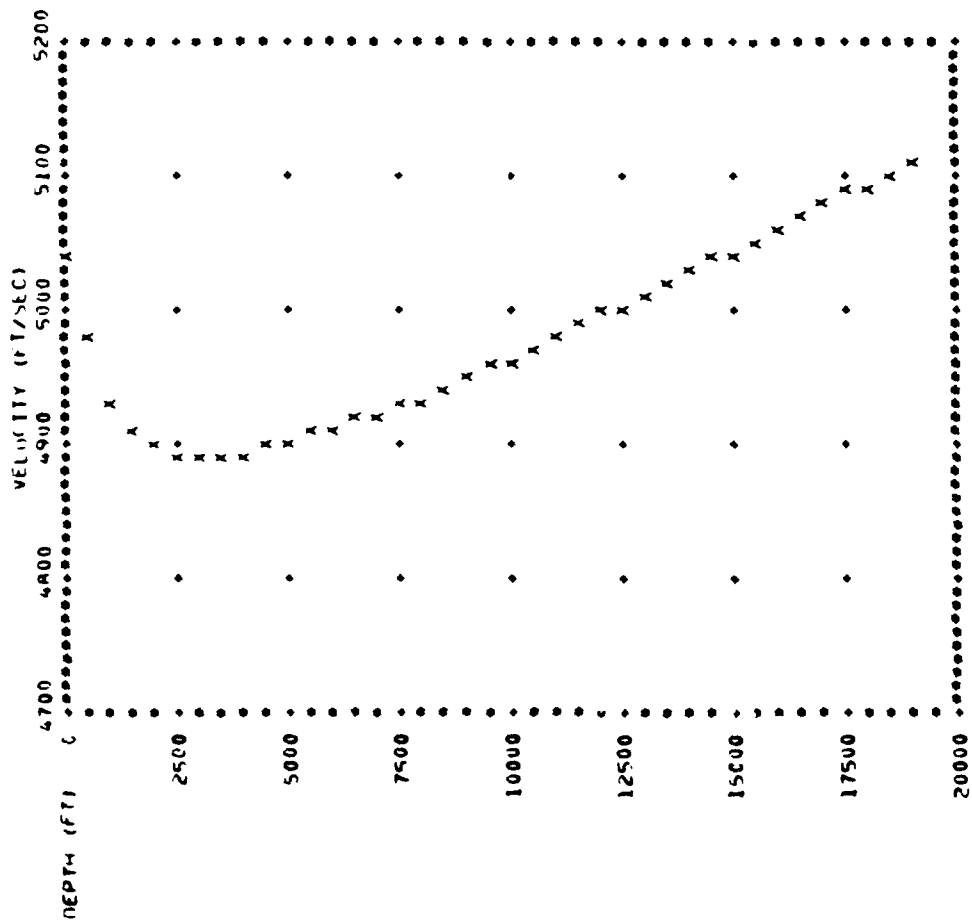
\*\*\*\*\*ICAPS GENERATED SOUND VELOCITY PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
0.00	0.00	25.61	78.10	35.88	1537.227	5043.641
26.00	85.31	25.61	78.10	35.89	1537.670	5045.095
27.00	88.59	25.50	77.90	35.89	1537.432	5044.316
39.00	127.96	25.45	77.81	35.90	1537.525	5044.620
79.00	259.20	24.81	76.66	36.10	1536.917	5042.626
95.00	311.70	23.23	73.81	36.19	1533.468	5031.309
105.00	344.51	21.72	71.10	36.18	1529.802	5019.281
112.00	370.44	19.49	67.08	36.07	1523.936	5000.035
148.00	485.59	17.58	63.64	35.85	1518.707	4982.876
175.00	574.18	15.76	60.37	35.71	1513.498	4965.787
201.00	659.48	14.60	58.28	35.57	1510.114	4954.684
224.00	734.94	13.64	56.55	35.46	1507.228	4945.215
250.00	820.25	13.01	55.42	35.32	1505.394	4939.197
330.00	1082.73	11.41	52.54	35.11	1500.965	4924.665
395.00	1296.00	10.32	50.58	34.99	1498.002	4914.943
455.00	1492.86	9.42	48.96	34.94	1495.636	4907.82
600.00	1969.60	8.03	46.45	34.83	1492.656	4897.406
800.00	2624.80	6.48	43.66	34.73	1489.803	4888.042
1000.00	3281.00	5.60	42.07	34.77	1489.637	4887.500
1200.00	3937.20	5.15	41.26	34.86	1491.253	4892.802
1500.00	4921.50	4.52	40.13	34.96	1493.825	4901.241
2000.00	6562.00	3.58	38.44	34.97	1498.366	4916.140
2500.00	8202.50	3.08	37.54	34.94	1504.721	4936.989
3000.00	9843.00	2.84	37.14	34.92	1512.365	4962.070
4000.00	13124.00	2.40	36.32	34.89	1527.841	5012.845
5000.00	16405.00	2.10	35.78	34.86	1544.295	5066.332
5806.00	19029.80	1.86	35.35	34.86	1557.722	5110.884

B2-4

THE LAYER IS AT 85.31 FEET ( 26.00 METERS).

\*\*\*VELOCITY PROFILE\*\*\*



SCAPS: ATL. STATION 24 - FEB WIN 2

\*\*\*\*\*HISTORICAL PROF[LE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
0.00	0.00	10.20	50.36	34.35	1490.283	4889.618
10.00	32.81	10.21	50.38	34.37	1490.508	4890.356
20.00	65.62	10.41	50.76	34.47	1491.773	4894.509
30.00	98.43	10.81	51.46	34.57	1493.246	4899.339
50.00	164.05	11.41	52.54	34.81	1495.997	4908.368
75.00	246.08	12.09	53.76	35.08	1499.107	4918.572
100.00	328.10	12.45	54.41	35.26	1500.974	4926.695
125.00	410.13	12.44	54.46	35.37	1501.623	4926.826
150.00	492.15	12.28	54.10	35.42	1501.414	4926.139
200.00	656.20	11.26	52.27	35.36	1498.623	4916.983
250.00	820.25	10.02	50.04	35.24	1494.861	4904.638
300.00	984.30	8.82	47.88	35.14	1491.126	4892.385
400.00	1312.40	6.87	44.37	35.02	1485.128	4872.705
500.00	1640.50	5.69	42.24	34.98	1482.019	4862.503
600.00	1968.60	5.04	41.07	34.97	1481.009	4859.192
800.00	2624.80	4.44	40.03	34.97	1481.927	4862.202
1000.00	3281.00	4.14	39.52	34.96	1484.071	4869.236
1200.00	3937.20	3.99	39.18	34.96	1483.612	4877.574
1500.00	4921.50	3.77	38.79	34.95	1490.702	4890.994
2000.00	6562.00	3.42	38.16	34.95	1497.669	4913.851
2500.00	8202.50	3.02	37.44	34.94	1504.484	4936.212
3000.00	9843.00	2.73	36.91	34.93	1511.842	4960.355

# HISTORICAL DATA

## BT DATA

(MERGE FACTOR = 835\*10\*\*-3)

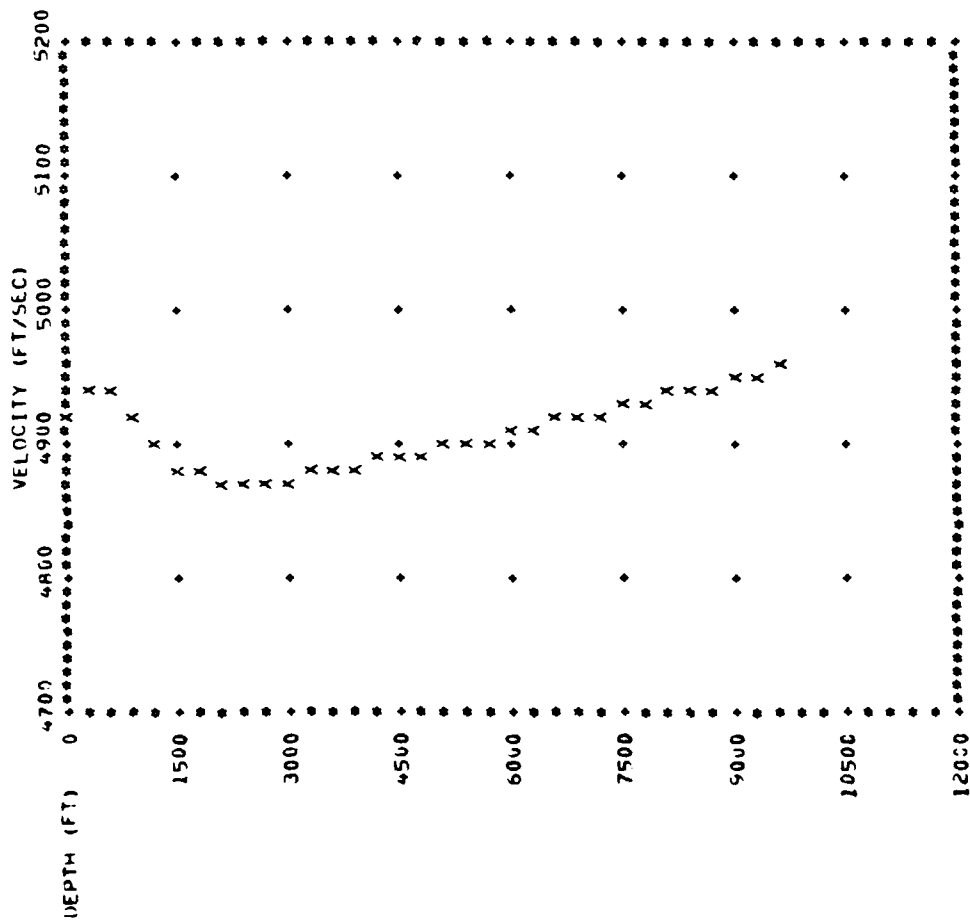
DEP (M)	TEMP (C)	SAL (PPT)	DEP (M)	TEMP (C)	SAL (PPT)	DEP (M)	TEMP (C)	SAL (PPT)
0.	12.86	34.35	0.	10.20	34.35	0.	12.86	34.35
16.	13.09	34.43	10.	10.21	34.37	16.	13.09	34.43
30.	13.09	34.57	20.	10.48	34.47	30.	13.09	34.57
35.	13.14	34.59	30.	10.81	34.57	35.	13.14	34.59
39.	13.41	34.68	50.	11.41	34.81	39.	13.41	34.68
48.	13.68	34.79	75.	12.09	35.08	48.	13.68	34.79
70.	13.96	35.01	100.	12.45	35.26	70.	13.96	35.01
85.	13.96	35.03	125.	12.48	35.37	85.	13.96	35.03
92.	14.11	35.08	150.	12.28	35.42	92.	14.11	35.08
104.	14.11	35.09	200.	11.26	35.36	104.	14.11	35.09
122.	14.57	35.23	250.	10.02	35.24	122.	14.57	35.23
128.	15.05	35.38	300.	8.82	35.14	128.	15.05	35.38
144.	13.92	35.41	400.	6.87	35.02	144.	13.92	35.41
147.	13.37	35.30	500.	5.69	34.98	147.	13.37	35.30
151.	13.50	35.35	600.	5.04	34.97	151.	13.50	35.35
171.	13.29	35.31	800.	4.44	34.97	171.	13.29	35.31
174.	13.54	35.39	1000.	4.14	34.94	174.	13.54	35.39

196.	1	13.40	35.35	186.	13.40	35.35
221.	1	12.50	35.31	221.	12.50	35.31
246.	1	11.95	35.25	246.	11.95	35.25
263.	1	11.53	35.21	263.	11.53	35.21
290.	1	11.14	35.16	290.	11.14	35.16
302.	1	10.39	35.14	302.	10.39	35.14
345.	1	9.20	35.09	345.	9.20	35.09
393.	1	8.61	35.03	393.	8.61	35.03
404.	1	8.22	35.02	404.	8.22	35.02
424.	1	7.89	35.01	424.	7.89	35.01
460.	1	7.37	35.00	460.	7.37	35.00
505.	1	6.94	34.98	505.	6.94	34.98
	1	6.11	34.97		6.11	34.97
	1	11.14	35.16		11.14	35.16
	1	10.39	35.14		10.39	35.14
	1	9.20	35.09		9.20	35.09
	1	8.61	35.03		8.61	35.03
	1	8.22	35.02		8.22	35.02
	1	7.89	35.01		7.89	35.01
	1	7.37	35.00		7.37	35.00
	1	6.94	34.98		6.94	34.98
	1	6.11	34.97		6.11	34.97
	1	5.21	34.97		5.21	34.97
	1	4.70	34.96		4.70	34.96
	1	4.35	34.96		4.35	34.96
	1	3.98	34.95		3.98	34.95
	1	3.51	34.95		3.51	34.95
	1	3.05	34.94		3.05	34.94
	1	2.74	34.94		2.74	34.94

\*\*\*\*\*ICAPS GENERATED SOUND VELOCITY PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
0.00	0.00	12.86	55.15	34.35	1499.587	4920.145
16.00	52.50	13.09	55.56	34.43	1500.721	4923.866
30.00	98.43	13.09	55.56	34.57	1501.125	4925.190
31.00	101.00	13.14	55.65	34.59	1501.404	4926.107
39.00	127.96	13.41	56.14	34.68	1502.473	4929.614
48.00	157.49	13.68	56.62	34.79	1503.647	4933.466
70.00	229.67	13.96	57.13	35.01	1505.206	4938.580
85.00	278.89	13.96	57.13	35.03	1505.467	4939.437
92.00	301.85	14.11	57.40	35.04	1506.135	4941.629
106.00	341.22	14.11	57.40	35.04	1506.346	4942.320
122.00	400.28	14.57	58.23	35.23	1508.296	4948.720
128.00	419.97	15.05	59.09	35.38	1510.104	4954.653
146.00	472.46	15.92	57.06	35.41	1506.777	4943.734
147.00	482.31	13.37	56.07	35.30	1504.888	4937.537
151.00	495.43	13.50	56.30	35.35	1505.442	4939.354
171.00	561.05	13.29	55.92	35.31	1505.019	4937.967
178.00	584.02	13.54	56.37	35.34	1506.059	4941.381
186.00	610.27	13.50	56.32	35.35	1505.682	4940.142
198.00	649.64	13.40	56.12	35.36	1505.894	4940.839
221.00	725.10	12.50	54.50	35.31	1503.186	4931.953
246.00	807.13	11.95	53.51	35.25	1501.637	4926.872
263.00	862.90	11.53	52.75	35.21	1500.414	4922.859
290.00	951.49	11.14	52.05	35.16	1499.420	4919.598
302.00	990.86	10.39	50.70	35.14	1496.918	4911.388
345.00	1131.95	9.20	48.56	35.09	1493.210	4899.223
393.00	1289.43	8.61	47.50	35.03	1491.719	4894.329
404.00	1325.52	8.22	46.80	35.02	1490.411	4890.038
424.00	1391.14	7.89	46.20	35.01	1489.469	4886.948
460.00	1509.26	7.37	45.27	35.00	1488.036	4882.247
505.00	1656.91	6.94	44.49	34.98	1487.077	4879.100
600.00	1968.60	6.11	43.00	34.97	1485.346	4873.422
800.00	2624.80	5.21	41.37	34.97	1485.000	4872.286
1000.00	3281.00	4.70	40.46	34.96	1486.231	4876.324
1200.00	3937.20	4.35	39.84	34.96	1488.126	4882.541
1500.00	4921.50	3.98	39.17	34.95	1491.588	4893.900
2000.00	6562.00	3.51	38.31	34.95	1498.031	4915.038
2500.00	8202.50	3.05	37.50	34.94	1504.632	4936.696
3000.00	9843.00	2.74	36.94	34.94	1511.916	4960.597

\*\*\*VELOCITY PROFILE\*\*\*



APPENDIX B

Section B3

ICAPS Environmental Profiles and Less Dense BT Data

# ICAPS: HISTORICAL DATA FBIC SHORT HT

\*\*\*\*\*HISTORICAL PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
10.00	0.00	14.92	58.86	34.57	1506.609	4943.183
20.00	32.81	14.92	58.86	34.57	1506.772	4943.719
30.00	65.62	14.90	58.82	34.57	1506.872	4944.046
40.00	98.43	14.87	58.77	34.56	1506.927	4944.228
50.00	164.05	14.84	58.71	34.56	1507.158	4944.986
75.00	246.08	14.68	58.42	34.53	1507.018	4944.528
100.00	328.10	14.39	57.90	34.50	1506.457	4942.686
125.00	410.13	13.98	57.16	34.47	1505.497	4939.535
150.00	492.15	13.58	56.44	34.44	1504.554	4936.440
200.00	656.20	12.73	54.91	34.39	1502.466	4929.590
250.00	820.25	11.93	53.47	34.33	1500.470	4923.043
300.00	984.30	11.10	51.98	34.27	1498.309	4915.951
400.00	1312.40	9.39	48.90	34.15	1493.605	4900.518
500.00	1640.50	7.44	45.39	34.05	1487.721	4881.212
600.00	1968.60	5.81	42.46	34.01	1482.857	4865.253
800.00	2624.80	4.18	39.52	34.15	1479.650	4854.731
1000.00	3281.00	3.45	38.21	34.30	1480.099	4856.205
1200.00	3937.20	3.07	37.53	34.41	1481.968	4862.335
1500.00	4921.50	2.62	36.72	34.51	1485.205	4872.958
2000.00	6562.00	1.95	35.51	34.60	1490.883	4891.587
2500.00	8202.50	1.66	34.99	34.63	1498.203	4915.603
3000.00	9843.00	1.56	34.81	34.66	1506.434	4942.610
4000.00	13124.00	1.50	34.70	34.67	1523.682	4999.201
5000.00	16405.00	1.55	34.79	34.68	1541.717	5058.374
5480.00	17979.88	1.57	34.83	34.68	1550.454	5087.040

## MERGED DATA

## HISTORICAL DATA

## BT DATA

(MERGE FACTOR = 835\*10\*\*-3)

DEPTH (M)	TEMP (C)	SAL (PPT)	DEP (M)	TEMP (C)	SAL (PPT)	DEP (M)	TEMP (C)	SAL (PPT)
0.	17.13	34.45	0.	14.92	34.57	0.	17.13	34.45
98.	17.20	34.49	10.	14.92	34.57	98.	17.20	34.49
152.	17.00	34.44	20.	14.90	34.57	152.	17.00	34.44
156.	16.17	34.43	30.	14.87	34.56	156.	16.17	34.43
476.	9.87	34.07	50.	14.84	34.56	476.	9.87	34.07
			75.	14.68	34.53	600.	7.45	34.01
			100.	14.39	34.50	800.	5.32	34.15
			125.	13.98	34.47	1000.	4.25	34.30
			150.	13.58	34.44	1200.	3.63	34.41
			200.	12.73	34.39	1500.	2.94	34.51
			250.	11.93	34.33	2000.	2.08	34.60
			300.	11.10	34.27	2500.	1.71	34.63
			400.	9.39	34.15	3000.	1.58	34.66
			500.	7.44	34.05	4000.	1.50	34.67



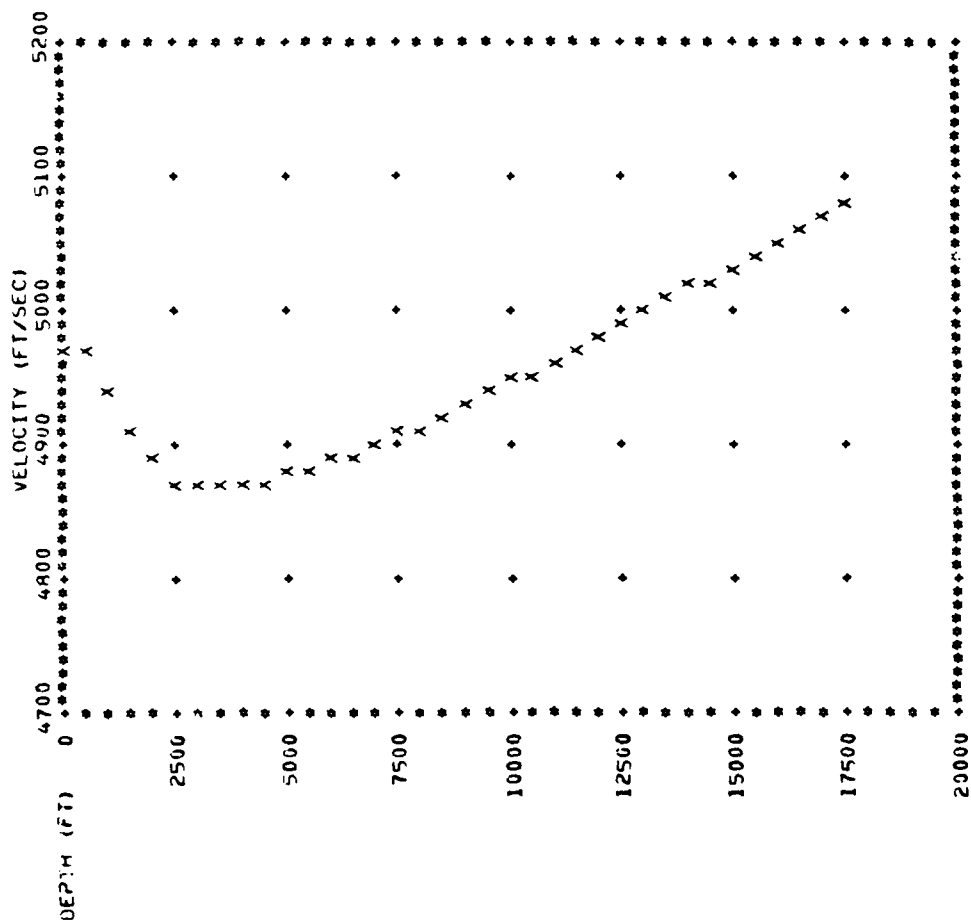
600.	5.81	34.61	5000.	1.55	34.68
800.	4.13	34.30	- .0.	.57	.68
1000.	3.45	34.30			
1200.	3.07	34.41			
1500.	2.62	34.51			
2000.	1.95	34.60			
2500.	1.66	34.63			
3000.	1.56	34.66			
4000.	1.50	34.67			
5000.	1.55	34.68			
5400.	1.57	34.68			

\*\*\*\*\*ICAPS GENERATED SOUND VELOCITY PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
0.00	0.00	17.13	62.83	34.45	1513.278	4965.066
98.00	321.54	17.20	62.96	34.49	1515.129	4971.140
152.00	496.71	17.30	62.60	34.44	1515.357	4971.885
156.00	511.84	16.17	61.11	34.43	1512.499	4963.423
476.00	1561.76	9.87	49.77	34.07	1496.521	4910.085
600.00	1968.60	7.45	45.41	34.01	1489.347	4886.548
900.00	2952.80	5.32	41.58	34.15	1484.371	4870.221
1000.00	3281.00	4.25	39.64	34.30	1483.453	4867.209
1200.00	3937.23	3.63	38.53	34.41	1484.329	4870.082
1500.00	4921.50	2.94	37.30	34.51	1486.594	4877.515
2003.00	6562.00	2.08	35.75	34.60	1491.454	4893.460
2500.00	8202.50	1.71	35.08	34.63	1498.435	4916.365
3000.00	9843.00	1.58	34.85	34.66	1506.528	4942.919
4000.00	13124.00	1.50	34.71	34.67	1523.698	4999.252
5000.00	16405.00	1.55	34.79	34.68	1541.720	5058.382
5480.00	17979.88	1.57	34.83	34.68	1550.455	5087.044

THE LAYER IS AT 498.71 FEET ( 152.01 METERS).

\*\*\*VELOCITY PROFILE\*\*\*



# MAPS: HISTORICAL DATA FEED SHORT HT

\*\*\*\*\*HISTORICAL PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
0.00	0.00	9.84	49.71	33.40	1487.753	4881.316
10.00	32.81	9.83	49.69	33.39	1487.866	4881.689
20.00	65.62	9.81	49.66	33.39	1487.956	4881.983
30.00	98.43	9.80	49.64	33.40	1488.095	4882.440
50.00	164.05	9.82	49.68	33.40	1488.495	4883.752
75.00	246.08	9.75	49.55	33.42	1488.672	4884.332
100.00	328.10	9.64	49.35	33.51	1488.791	4884.722
125.00	410.13	9.42	48.96	33.65	1488.566	4883.986
150.00	492.15	5.21	48.58	33.82	1488.414	4883.487
200.00	656.20	8.81	47.86	33.97	1487.930	4881.898
250.00	820.25	8.21	46.78	33.96	1486.489	4877.171
300.00	984.30	7.44	45.46	33.97	1484.485	4870.596
400.00	1312.40	5.89	42.60	33.94	1479.792	4855.197
500.00	1640.50	4.82	40.66	33.97	1477.103	4846.394
600.00	1968.60	4.23	39.61	34.04	1476.399	4844.066
800.00	2624.80	3.66	38.59	34.21	1477.542	4847.815
1000.00	3281.00	3.19	37.74	34.32	1479.019	4852.660
1200.00	3937.20	2.84	37.11	34.41	1480.981	4859.100
1500.00	4921.50	2.42	36.36	34.49	1484.314	4870.034
2000.00	6562.00	1.97	35.55	34.59	1490.956	4891.827
2500.00	8202.50	1.73	35.11	34.63	1498.508	4916.605
3000.00	9843.00	1.57	34.83	34.66	1506.478	4942.753
4000.00	13124.00	1.49	34.68	34.67	1523.639	4999.060
4750.00	15584.75	1.43	34.57	34.68	1536.724	5041.992

## MERGED DATA

## HISTORICAL DATA

(MERGE FACTOR = 835\*10\*\*-3)

DEP (M)	TEMP (C)	SAL (PPT)	DEP (M)	TEMP (C)	SAL (PPT)	DEP (M)	TEMP (C)	SAL (PPT)
0.	12.30	33.40	0.	9.84	33.40	0.	12.30	33.40
109.	12.32	33.56	10.	9.83	33.39	109.	12.32	33.56
117.	12.07	33.61	20.	9.81	33.39	117.	12.07	33.61
126.	11.15	33.66	30.	9.80	33.40	126.	11.15	33.66
134.	10.77	33.71	50.	9.82	33.40	134.	10.77	33.71
497.	5.43	33.97	75.	9.75	33.42	497.	5.43	33.97
			100.	9.64	33.51	600.	4.71	34.04
			125.	9.42	33.55	800.	4.00	34.21
			150.	9.21	33.82	1000.	3.42	34.32
			200.	8.81	33.97	1200.	3.00	34.41
			250.	8.21	33.98	1500.	2.52	34.49
			300.	7.48	33.97	2000.	2.00	34.59
			400.	5.89	33.94	2500.	1.75	34.63
			500.	4.82	33.97	3000.	1.58	34.66
			600.	4.23	34.04	4000.	1.49	34.67

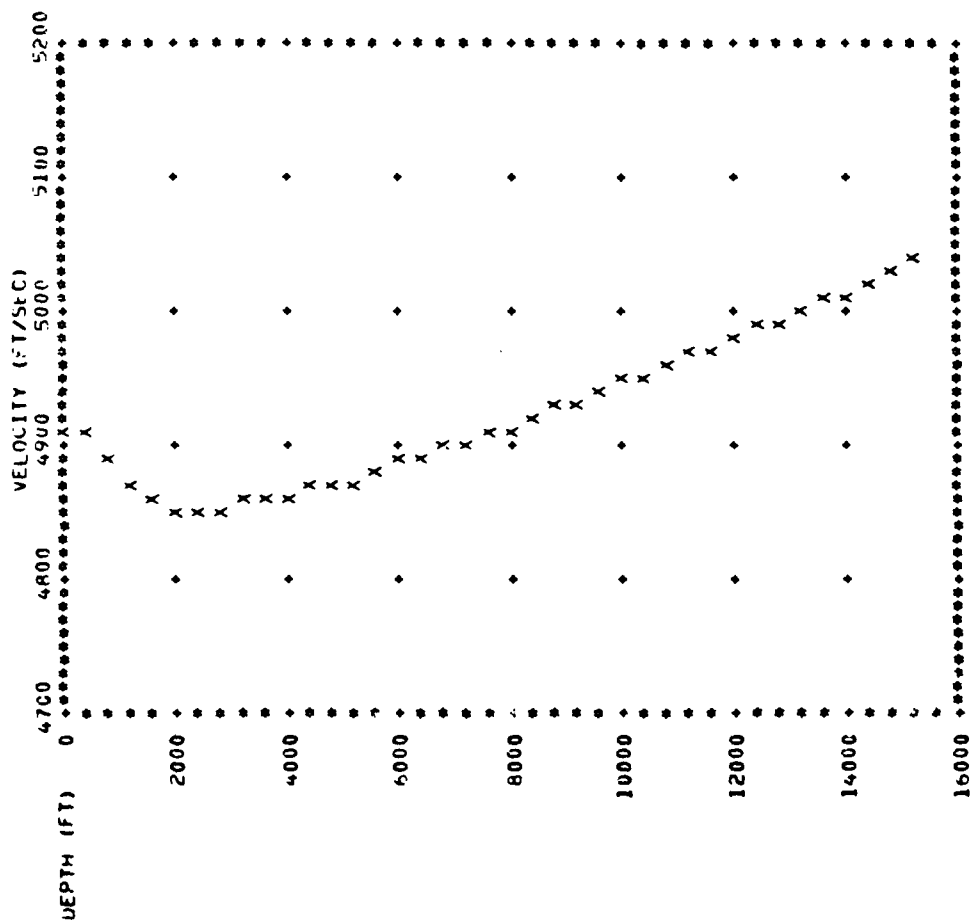
800.	3.66	34.21	4750.	1.43	34.67
1000.	3.19	34.32			
1200.	2.84	34.41			
1500.	2.42	34.49			
2000.	1.97	34.59			
2500.	1.73	34.63			
3000.	1.57	34.66			
4000.	1.49	34.67			
4750.	1.43	34.68			

\*\*\*\*\*ICAPS GENERATED SOUND VELOCITY PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
0.00	0.00	12.30	54.14	33.40	1496.490	4909.984
109.00	357.63	12.32	54.18	33.56	1498.539	4916.707
117.00	383.88	12.07	53.73	33.61	1497.865	4914.496
126.00	413.41	11.15	52.07	33.66	1494.859	4904.633
134.00	439.65	10.77	51.39	33.71	1493.707	4900.852
147.00	485.66	5.43	41.77	33.97	1479.562	4854.443
160.00	524.60	4.71	40.48	34.04	1478.408	4850.658
178.00	582.50	4.00	39.19	34.21	1478.961	4852.471
190.00	621.00	3.42	38.16	34.32	1480.018	4855.940
200.00	656.20	3.00	37.41	34.41	1481.683	4861.402
210.00	688.80	2.52	36.53	34.49	1484.726	4871.385
220.00	721.50	2.01	35.62	34.59	1491.124	4892.379
230.00	754.20	1.75	35.14	34.63	1498.576	4916.829
240.00	786.90	1.58	34.84	34.66	1506.505	4942.844
250.00	819.60	1.49	34.68	34.67	1523.644	4999.075
260.00	852.30	1.43	34.57	34.67	1536.712	5041.950

THE LAYER IS AT 357.63 FEET ( 109.01 METERS).

\*\*\*VELOCITY PROFILE\*\*\*



ICAPS: HISTORICAL DATA AUGIF SHORT HT

\*\*\*\*\*HISTORICAL PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
0.00	0.00	16.04	60.87	33.16	1508.402	4949.067
10.00	32.81	15.78	60.40	33.17	1507.770	4947.992
20.00	65.62	14.93	58.87	33.20	1505.286	4938.844
30.00	98.43	13.52	56.34	33.24	1500.903	4924.464
50.00	164.05	10.35	50.63	33.36	1490.376	4889.923
75.00	246.08	9.00	48.20	33.44	1485.913	4875.282
100.00	328.10	8.61	47.50	33.51	1484.944	4872.100
125.00	410.13	8.46	47.23	33.61	1484.913	4872.001
150.00	492.15	8.53	47.35	33.79	1485.822	4874.981
200.00	656.20	8.28	46.90	33.96	1485.911	4875.275
250.00	820.25	7.60	45.68	33.96	1484.118	4869.390
300.00	984.30	6.83	44.29	33.95	1481.914	4862.158
400.00	1312.40	5.50	41.90	33.94	1478.211	4850.011
500.00	1640.50	4.65	40.37	33.94	1476.432	4844.172
600.00	1968.60	4.20	39.56	34.07	1476.314	4843.787
800.00	2624.80	3.59	38.46	34.23	1477.273	4846.931
1000.00	3281.00	3.13	37.63	34.34	1478.790	4851.909
1200.00	3937.20	2.78	37.00	34.41	1480.723	4858.253
1500.00	4921.50	2.39	36.30	34.49	1484.184	4869.608
2000.00	6562.00	1.96	35.53	34.59	1490.913	4881.685
2500.00	8202.50	1.72	35.10	34.63	1498.464	4916.462
3000.00	9843.00	1.57	34.83	34.66	1506.478	4942.752
4000.00	13124.00	1.50	34.70	34.67	1523.682	4999.201
4750.00	15584.75	1.45	34.61	34.68	1536.810	5042.273

MERGED DATA

HISTORICAL DATA

(MERGE FACTOR = 835\*10\*\*-3)

DEP (M)	TEMP (C)	SAL (PPT)	DEP (M)	TEMP (C)	SAL (PPT)	DEP (M)	TEMP (C)	SAL (PPT)
0.	14.80	33.16	0.	16.04	33.16	0.	14.80	33.16
30.	14.70	33.24	10.	15.78	33.17	30.	14.70	33.24
56.	11.03	33.28	20.	14.93	33.20	56.	11.03	33.28
55.	9.10	33.38	30.	13.52	33.24	55.	9.10	33.38
113.	7.60	33.56	50.	10.35	33.36	113.	7.60	33.56
147.	7.57	33.72	75.	9.00	33.44	147.	7.57	33.72
155.	7.96	33.81	100.	8.61	33.51	155.	7.96	33.81
196.	8.10	33.95	125.	8.46	33.61	196.	8.10	33.95
344.	5.98	33.95	150.	8.53	33.79	344.	5.98	33.95
457.	4.78	33.97	200.	7.60	33.96	457.	4.78	33.97
			250.	6.83	33.95	600.	4.00	34.07
			300.	5.50	33.94	800.	3.45	34.23
			400.	4.65	33.99	1000.	3.03	34.34
			500.	4.20	34.07	1200.	2.71	34.41
			600.			1500.	2.35	34.49



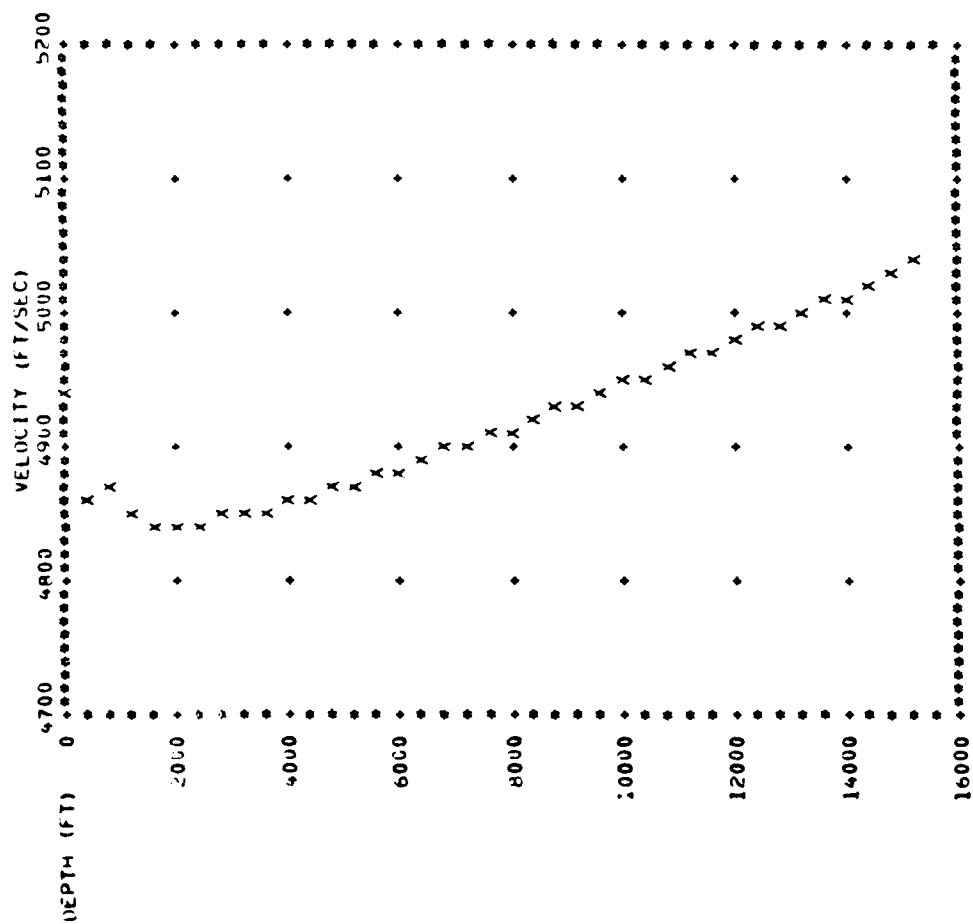
1000.	3.13	34.34	2000.	1.04	34.66
1200.	2.78	34.41	2500.	1.04	34.66
1500.	2.34	34.49	3000.	1.57	34.66
2000.	1.96	34.59	4000.	1.50	34.67
2500.	1.72	34.63	4750.	1.45	34.67
3000.	1.57	34.66			
4000.	1.50	34.67			
4750.	1.45	34.68			

\*\*\*\*\*ICAPS GENERATED SOUND VELOCITY PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
0.00	0.00	14.80	58.64	33.16	1504.495	4936.248
30.00	98.43	14.70	58.46	33.24	1504.761	4937.122
36.00	118.12	11.03	51.85	33.24	1492.481	4896.829
55.00	180.46	9.10	48.38	33.38	1485.874	4875.167
113.00	370.75	7.60	45.68	33.56	1481.354	4860.322
147.00	482.31	7.57	45.63	33.72	1482.003	4862.450
155.00	508.56	7.96	46.33	33.81	1483.751	4868.187
196.00	643.68	8.10	46.58	33.95	1485.141	4872.147
344.00	1128.66	5.98	42.76	33.95	1479.242	4853.391
457.00	1499.42	4.78	40.60	33.97	1476.233	4843.519
600.00	1968.60	4.00	39.21	34.07	1475.489	4841.079
800.00	2624.80	3.45	38.22	34.23	1476.693	4845.021
1000.00	3281.00	3.03	37.46	34.34	1478.380	4850.566
1200.00	3937.20	2.71	36.88	34.41	1480.436	4857.311
1500.00	4921.50	2.35	36.23	34.49	1484.016	4869.056
2000.00	6562.00	1.94	35.50	34.59	1490.844	4891.460
2500.00	8202.50	1.71	35.08	34.63	1498.437	4916.370
3000.00	9843.00	1.57	34.82	34.66	1506.466	4942.716
4000.00	13124.00	1.50	34.70	34.67	1523.680	4999.195
4750.00	15584.75	1.45	34.61	34.67	1536.795	5042.226

B3-12 THE LAYER IS AT 98.43 FEET ( 30.00 METERS).

\*\*\*VELOCITY PROFILE\*\*\*



# ICAPS: HISTORICAL DATA FEB22

SHORT MT

\*\*\*\*\*HISTORICAL PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
0.00	0.00	24.51	76.12	36.54	1535.396	5017.634
10.00	32.81	24.51	76.12	36.54	1535.561	5018.175
20.00	65.62	24.51	76.12	36.55	1535.737	5018.754
30.00	98.43	24.51	76.12	36.55	1535.902	5019.296
40.00	131.24	24.45	76.01	36.59	1536.135	5040.059
50.00	164.05	24.21	75.58	36.72	1536.122	5040.017
60.00	196.86	23.31	73.96	36.86	1534.511	5034.731
70.00	229.67	21.33	70.39	36.83	1529.874	5019.516
80.00	262.48	19.47	67.05	36.68	1525.115	5003.903
90.00	295.29	16.95	62.51	36.33	1518.283	4981.488
100.00	328.10	15.22	59.40	36.03	1513.444	4965.609
110.00	360.91	13.80	56.84	35.80	1509.428	4952.435
120.00	393.72	11.72	53.10	35.47	1503.647	4933.466
130.00	426.53	9.95	49.91	35.22	1498.684	4917.183
140.00	459.34	8.40	47.12	35.01	1494.308	4902.824
150.00	492.15	6.37	43.47	34.83	1489.499	4887.046
160.00	524.96	5.53	41.95	34.84	1489.460	4886.918
170.00	557.77	5.10	41.18	34.93	1491.163	4892.505
180.00	590.58	4.37	39.87	34.99	1493.261	4899.389
190.00	623.39	3.54	38.37	34.97	1498.202	4915.601
200.00	656.20	3.07	37.53	34.94	1504.696	4936.907
210.00	689.01	2.72	36.60	34.91	1511.772	4960.125
220.00	721.82	2.45	36.41	34.86	1528.006	5013.389
230.00	754.63	2.36	36.25	34.84	1545.358	5070.321
240.00	787.44	2.24	36.12	34.82	1559.455	5116.573

## MERGED DATA

## HISTORICAL DATA

## BT DATA

(MERGE FACTOR = 835\*10\*\*3)

DEPTH (M)	TEMP (C)	SAL (PPT)	DEPTH (M)	TEMP (C)	SAL (PPT)	DEPTH (M)	TEMP (C)	SAL (PPT)
0.	25.61	36.54	0.	24.51	36.54	0.	25.61	36.54
20.	25.61	36.55	10.	24.51	36.54	26.	25.61	36.55
47.	24.60	36.79	20.	24.51	36.55	87.	24.60	36.79
98.	22.33	36.85	30.	24.51	36.55	98.	22.33	36.85
137.	17.98	36.76	50.	24.45	36.59	137.	17.98	36.76
216.	13.69	36.23	75.	24.21	36.72	216.	13.69	36.23
345.	10.80	35.63	100.	23.31	36.86	345.	10.80	35.63
455.	9.42	35.33	125.	21.33	36.83	455.	9.42	35.33
			150.	19.47	36.88	600.	7.59	35.01
			200.	16.95	36.33	800.	5.60	34.83
			250.	15.22	36.03	1000.	4.99	34.84
			300.	13.80	35.80	1200.	4.72	34.93
			400.	11.72	35.47	1500.	4.15	34.99
			500.	9.95	35.22	2000.	3.45	34.97

3.03	34.94
2.7	34.8
2.45	34.86
2.36	34.84
2.29	34.84

2500.
00.
4000.
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34.01
34.84
34.93
34.99
34.97
34.94
34.91
34.86
34.84
34.82

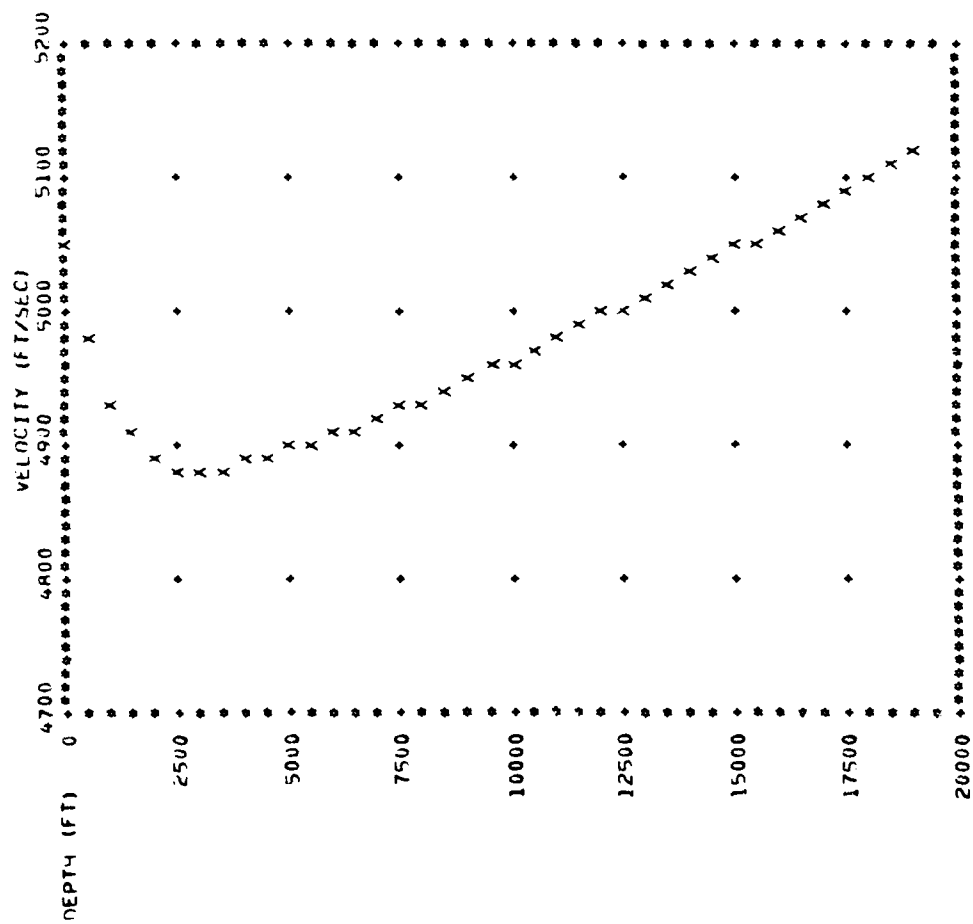
4.53
5.10
4.37
3.54
3.07
2.72
2.45
2.36
2.29

400.
1000.
1200.
1500.
2000.
2500.
3000.
4000.
5000.
5000.

\*\*\*\*\*ICAPS GENERATED SOUND VELOCITY PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
0.00	0.00	25.61	78.10	36.54	1537.965	5046.062
26.00	85.31	25.61	78.10	36.55	1538.406	5047.510
87.00	285.45	24.60	76.28	36.79	1537.325	5043.963
98.00	321.54	22.33	72.19	36.85	1532.021	5026.561
137.00	449.50	17.90	64.36	36.76	1520.708	4989.707
216.00	708.70	13.69	56.64	36.23	1508.234	4948.515
345.00	1131.95	10.80	51.44	35.63	1499.717	4920.571
455.00	1492.86	9.42	48.96	35.33	1496.150	4908.568
600.00	1968.60	7.29	45.13	35.01	1490.059	4888.884
800.00	2624.80	5.60	42.08	34.83	1486.402	4876.884
1000.00	3281.00	4.59	40.98	34.84	1487.266	4879.719
1200.00	3937.20	4.72	40.50	34.93	1489.623	4887.452
1500.00	4921.50	4.15	39.47	34.99	1492.352	4896.408
2000.00	6562.00	3.45	38.21	34.97	1497.828	4914.374
2500.00	8202.50	3.03	37.46	34.94	1504.543	4936.406
3000.00	9843.00	2.71	36.87	34.91	1511.710	4959.921
4000.00	13124.00	2.45	36.41	34.86	1527.996	5013.356
5000.00	16405.00	2.36	36.25	34.84	1545.357	5070.316
5800.00	19029.80	2.29	36.12	34.84	1559.482	5116.661

\*\*\*VELOCITY PROFILE\*\*\*



## ICAPS: HISTORICAL DATA FEB2E

SHORT HT

\*\*\*\*\*HISTORICAL PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
0.00	0.00	12.42	54.36	35.70	1499.793	4920.821
10.00	32.81	12.39	54.30	35.69	1499.842	4920.980
20.00	65.62	12.38	54.28	35.69	1499.971	4921.404
30.00	98.43	12.36	54.25	35.69	1500.066	4921.717
40.00	131.24	12.32	54.18	35.69	1500.257	4922.342
50.00	164.05	12.30	54.14	35.68	1500.584	4923.417
60.00	196.86	12.27	54.09	35.68	1500.690	4924.422
70.00	229.67	12.22	54.00	35.68	1501.128	4925.203
80.00	262.48	12.16	53.89	35.67	1501.320	4925.829
90.00	295.29	12.03	53.65	35.66	1501.679	4927.010
100.00	328.10	11.85	53.33	35.63	1501.840	4927.537
110.00	360.91	11.66	52.99	35.60	1501.964	4927.943
120.00	393.72	11.33	52.39	35.57	1502.415	4929.425
130.00	426.53	11.02	51.84	35.54	1502.930	4931.113
140.00	459.34	10.62	51.12	35.51	1503.117	4931.727
150.00	492.15	9.71	49.48	35.52	1503.143	4931.814
160.00	524.96	8.88	47.98	35.58	1503.469	4932.882
170.00	557.77	7.61	45.70	35.50	1501.878	4927.660
180.00	590.58	5.26	41.47	35.14	1497.117	4912.039
190.00	623.39	3.73	38.71	34.99	1499.628	4918.339
200.00	656.20	3.20	37.76	34.97	1505.287	4938.847
210.00	689.01	2.79	37.02	34.94	1512.111	4961.236
220.00	721.82	2.54	36.57	34.93	1528.484	5014.955
230.00	754.63	2.39	36.30	34.92	1538.811	5048.839

## MERGED DATA

## HISTORICAL DATA

(MERGE FACTOR = 835\*10\*\*-3)

DEP (M)	TEMP (C)	SAL (PPT)	DEP (M)	TEMP (C)	SAL (PPT)	DEP (M)	TEMP (C)	SAL (PPT)
0.	10.93	35.54	0.	12.42	35.70	0.	10.93	35.54
8.	11.40	35.66	10.	12.39	35.69	8.	11.40	35.66
372.	10.99	35.58	20.	12.38	35.69	372.	10.99	35.58
493.	10.55	35.54	30.	12.36	35.69	493.	10.55	35.54
			50.	12.32	35.69	600.	10.21	35.51
			75.	12.30	35.68	800.	9.42	35.52
			100.	12.27	35.68	1000.	8.68	35.58
			125.	12.22	35.66	1200.	7.47	35.50
			150.	12.16	35.67	1500.	5.18	35.14
			200.	12.03	35.66	2000.	3.70	34.99
			250.	11.85	35.63	2500.	3.19	34.97
			300.	11.66	35.60	3000.	2.78	34.94
			400.	11.33	35.57	4000.	2.54	34.93
			500.	11.02	35.54	4620.	2.39	34.93
			600.	10.62	35.51			
			800.	9.71	35.52			



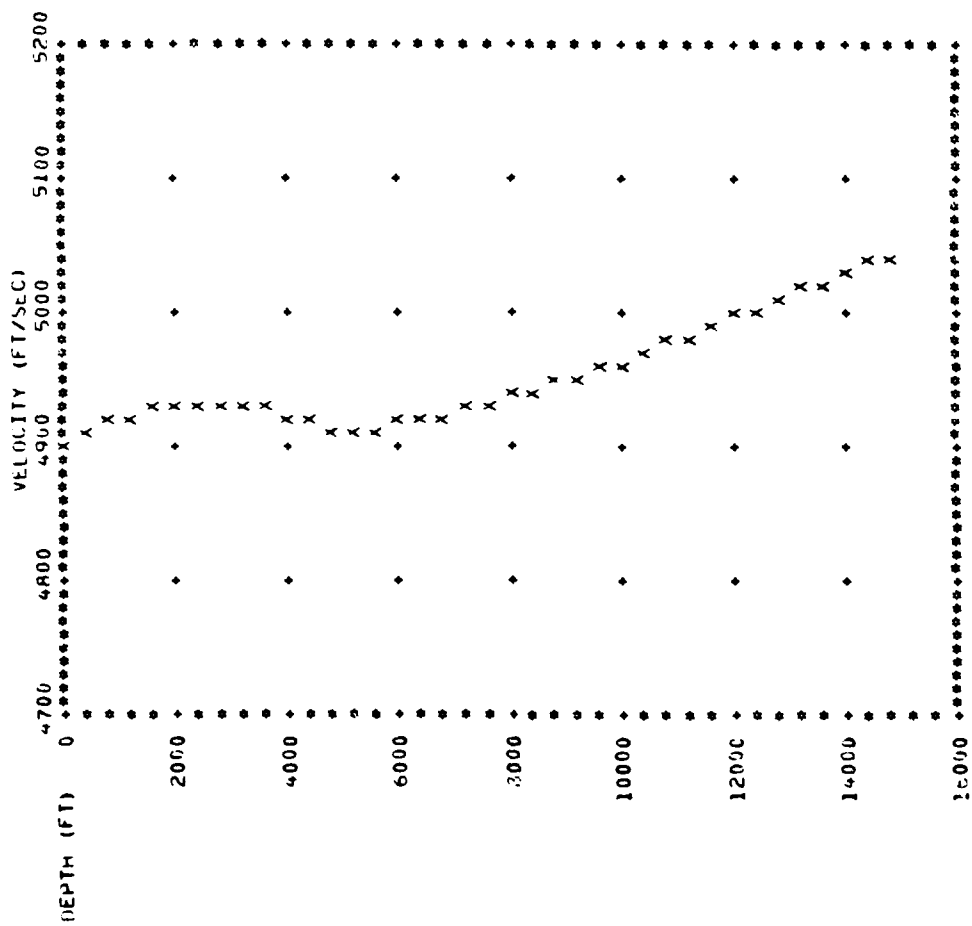
1200	7.61	35.50
1500	5.11	35
2000	3.73	34.99
2500	3.20	34.97
3000	2.79	34.94
4000	2.54	34.93
4620	2.39	34.92

\*\*\*\*\*ICAPS GENERATED SOUND VELOCITY PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
0.00	0.00	10.93	51.67	35.54	1494.419	4903.189
8.00	26.25	11.40	52.52	35.66	1496.361	4909.561
372.00	1220.53	10.99	51.78	35.58	1500.770	4924.027
473.00	1617.53	10.55	50.99	35.54	1501.147	4925.265
630.00	1968.60	10.21	50.38	35.51	1501.644	4926.894
800.00	2624.80	9.42	48.96	35.52	1502.094	4928.370
1000.00	3281.00	8.69	47.62	35.58	1502.723	4930.434
1200.00	3937.20	7.47	45.45	35.50	1501.341	4925.901
1500.00	4921.50	5.18	41.32	35.14	1496.727	4910.959
2000.00	6562.00	3.70	38.65	34.99	1498.890	4917.857
2500.00	8202.50	3.19	37.74	34.97	1505.231	4938.662
3000.00	9843.00	2.78	37.01	34.94	1512.088	4961.161
4000.00	13124.00	2.54	36.57	34.93	1528.480	5014.943
4620.00	15158.22	2.39	36.30	34.93	1538.824	5048.880

THE LAYER IS AT 3281.00 FEET ( 1000.05 METERS).

\*\*\*VELOCITY PROFILE\*\*\*



ICAPS: HISTORICAL DATA AUG2E SMORI HT

\*\*\*\*\*HISTORICAL PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
0.00	0.00	17.49	63.48	35.66	1515.796	4973.325
10.00	32.81	17.16	62.89	35.65	1514.972	4970.625
20.00	65.62	16.81	62.26	35.65	1514.092	4967.735
30.00	98.43	16.09	60.95	35.65	1512.073	4961.112
50.00	164.05	14.36	57.85	35.65	1506.966	4944.357
75.00	246.08	13.04	55.54	35.65	1503.178	4931.928
100.00	328.10	12.47	54.45	35.64	1501.521	4926.490
125.00	410.13	12.21	53.98	35.63	1501.031	4924.883
150.00	492.15	12.01	53.62	35.62	1500.742	4923.933
200.00	656.20	11.75	53.15	35.60	1500.637	4923.591
250.00	820.25	11.50	52.86	35.58	1500.876	4924.273
300.00	984.30	11.43	52.57	35.57	1501.125	4925.190
400.00	1312.40	11.12	52.02	35.54	1501.640	4926.879
500.00	1640.50	10.80	51.44	35.51	1502.112	4928.431
600.00	1968.60	10.41	50.74	35.49	1502.340	4929.177
800.00	2624.80	9.67	49.41	35.56	1503.049	4931.504
1000.00	3281.00	8.75	47.75	35.58	1502.984	4931.289
1200.00	3937.20	7.50	45.50	35.47	1501.414	4926.140
1500.00	4921.50	5.07	41.13	35.13	1496.329	4909.457
2000.00	6562.00	3.65	38.57	34.96	1498.651	4917.073
2500.00	8202.50	3.20	37.76	34.95	1505.260	4938.757
3000.00	9843.00	2.86	37.15	34.94	1512.408	4962.210
4000.00	13124.00	2.57	36.63	34.91	1528.583	5015.280
4620.00	15158.22	2.39	36.30	34.89	1538.770	5048.704

MERGED DATA

HISTORICAL DATA

BT DATA

(MERGE FACTOR = 835\*10\*\*-3)

DEPTH (M)	TEMP (C)	SAL (PPT)	DEPTH (M)	TEMP (C)	SAL (PPT)	DEPTH (M)	TEMP (C)	SAL (PPT)
0.	19.00	35.64	0.	17.49	35.66	0.	19.00	35.64
22.	19.00	35.65	10.	17.16	35.65	22.	19.00	35.65
27.	18.80	35.65	20.	16.81	35.65	27.	18.80	35.65
29.	17.10	35.65	30.	16.09	35.65	29.	17.10	35.65
37.	15.30	35.65	50.	14.36	35.65	37.	15.30	35.65
53.	14.10	35.65	75.	13.08	35.65	53.	14.10	35.65
122.	13.90	35.63	100.	12.47	35.64	122.	13.90	35.63
414.	11.40	35.54	125.	12.21	35.63	414.	11.40	35.54
			150.	12.01	35.62	500.	11.07	35.51
			200.	11.75	35.60	600.	10.64	35.49
			250.	11.59	35.58	800.	9.43	35.56
			300.	11.43	35.57	1000.	8.86	35.58
			400.	11.12	35.54	1200.	7.58	35.47
			500.	10.80	35.51	1500.	5.11	35.13
			600.	10.41	35.49	2000.	3.67	34.96

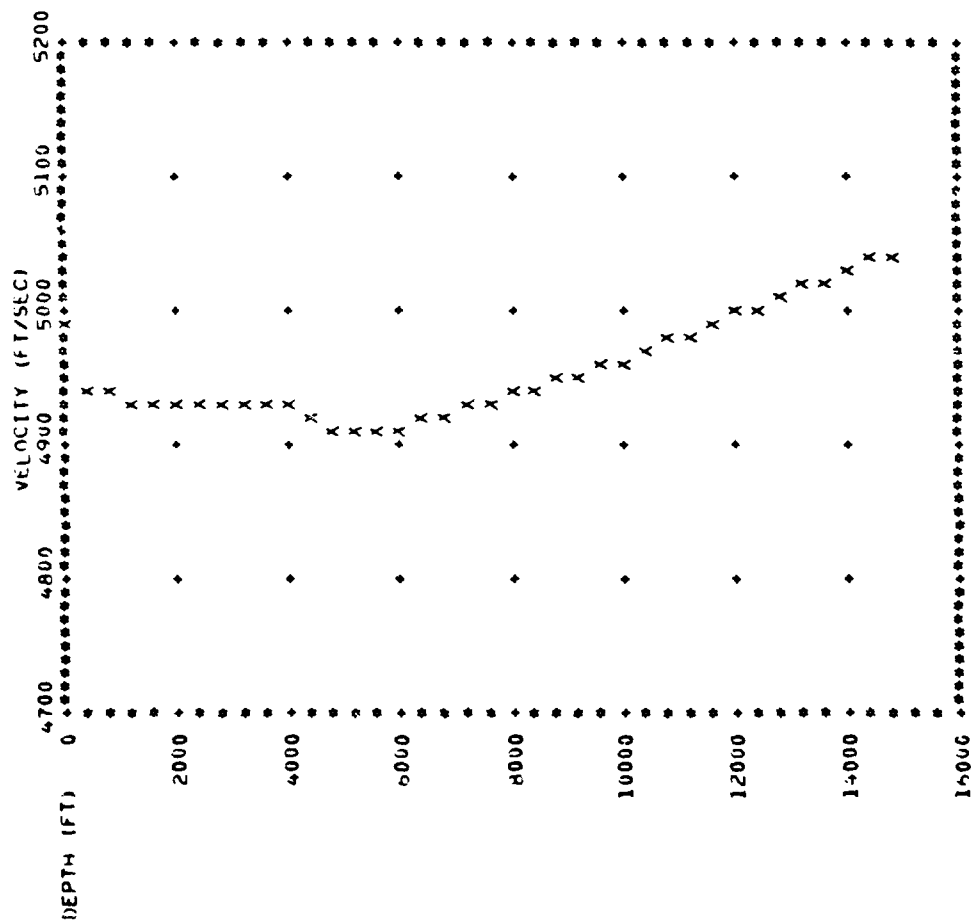
1000.	8.75	35.58	3000.	2.46	34.91
12.	7	3	1000.	2.57	34.91
1500.	5.07	35.13	4620.	2.3.	34.
2000.	3.65	34.96			
2500.	3.20	34.95			
3000.	2.46	34.94			
4000.	2.57	34.91			
4620.	2.34	34.89			

\*\*\*\*\*ICAPS GENERATED SOUND VELOCITY PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
3.00	0.00	19.00	66.20	35.64	1520.108	4987.476
22.00	72.18	19.00	66.20	35.65	1520.484	4989.707
27.00	88.59	17.80	65.84	35.65	1520.002	4987.127
29.00	95.15	17.10	62.78	35.65	1515.105	4971.066
37.00	121.40	15.30	59.54	35.65	1509.740	4953.457
53.00	173.89	14.10	57.38	35.65	1506.175	4941.761
122.00	400.28	13.70	57.02	35.63	1506.629	4943.251
414.00	1358.33	11.40	52.52	35.54	1502.847	4930.840
500.00	1640.50	11.07	51.93	35.51	1503.072	4931.586
600.00	1968.60	10.64	51.15	35.49	1503.150	4931.836
800.00	2624.80	9.83	49.69	35.56	1503.625	4933.394
1000.00	3281.00	8.86	47.95	35.58	1503.395	4932.638
1200.00	3937.20	7.58	45.64	35.47	1501.710	4927.110
1500.00	4921.50	5.11	41.21	35.13	1496.512	4910.055
2000.00	6562.00	3.67	36.60	34.96	1498.727	4917.323
2500.00	8202.50	3.21	37.77	34.95	1505.291	4938.854
3000.00	9843.00	2.86	37.15	34.94	1512.421	4962.252
4000.00	13124.00	2.57	36.63	34.91	1528.565	5015.287
4620.00	15158.22	2.39	36.30	34.91	1538.798	5048.796

THE LAYER IS AT 72.18 FEET ( 22.00 METERS).

\*\*\*VELOCITY PROFILE\*\*\*



# ICAPS: HISTORICAL DATA FEB2H

SHORT H'

\*\*\*\*\*HISTORICAL PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
0.00	0.00	3.32	37.98	32.41	1460.472	4791.807
10.00	32.81	3.38	38.08	32.46	1460.960	4793.411
20.00	65.62	3.47	38.25	32.51	1461.577	4795.435
30.00	98.43	3.63	38.53	32.59	1452.533	4798.570
50.00	164.05	4.12	39.42	32.79	1465.208	4807.342
75.00	246.08	5.02	41.04	33.22	1469.950	4822.905
100.00	328.10	6.05	42.89	33.68	1475.170	4840.034
125.00	410.13	6.80	44.24	34.06	1479.073	4852.838
150.00	492.15	7.17	44.91	34.31	1481.266	4860.033
200.00	656.20	7.31	45.16	34.59	1483.000	4865.722
250.00	820.25	6.89	44.40	34.77	1482.413	4863.797
300.00	984.30	6.40	43.52	34.90	1481.468	4860.696
400.00	1312.40	5.29	41.52	34.88	1478.613	4851.330
500.00	1640.50	4.81	40.66	34.91	1478.332	4850.408
600.00	1968.60	4.59	40.26	34.93	1479.101	4852.930
800.00	2624.80	4.28	39.70	34.95	1481.151	4859.656
1000.00	3281.00	4.05	39.29	34.95	1483.514	4867.409
1200.00	3937.20	3.88	38.98	34.95	1486.137	4876.016
1500.00	4921.50	3.70	38.66	34.95	1490.408	4890.028
2000.00	6562.00	3.41	38.14	34.95	1497.627	4913.713
2500.00	8202.50	3.09	37.56	34.95	1504.794	4937.230
3000.00	9843.00	2.60	36.68	34.92	1511.275	4958.494

## BT DATA

## HISTORICAL DATA

## MERGED DATA

(MEKGE FACTOR = 835\*10\*\*-3)

DEPTH (M)	TEMP (C)	SAL (PPT)	DEPTH (M)	TEMP (C)	SAL (PPT)	DEPTH (M)	TEMP (C)	SAL (PPT)
0.	12.86	32.41	0.	3.32	32.41	0.	12.86	32.41
35.	13.14	32.62	10.	3.38	32.46	35.	13.14	32.62
48.	13.68	32.77	20.	3.47	32.51	48.	13.68	32.77
118.	14.20	33.95	30.	3.63	32.59	118.	14.20	33.95
133.	14.86	34.14	50.	4.12	32.79	133.	14.86	34.14
147.	13.37	34.28	75.	5.02	33.22	147.	13.37	34.28
194.	13.40	34.58	100.	6.05	33.68	194.	13.40	34.58
221.	12.50	34.67	125.	6.80	34.06	221.	12.50	34.67
250.	11.14	34.67	150.	7.17	34.31	250.	11.14	34.67
347.	9.00	34.89	200.	7.31	34.59	347.	9.00	34.89
355.	8.60	34.88	250.	6.89	34.77	355.	8.60	34.88
407.	7.90	34.88	300.	6.40	34.90	407.	7.90	34.88
477.	7.03	34.90	400.	5.29	34.88	477.	7.03	34.90
			500.	4.81	34.91	600.	6.35	34.93
			600.	4.59	34.93	800.	5.51	34.95
			800.	4.28	34.95	1000.	4.41	34.95
			1000.	4.05	34.95	1200.	4.48	34.95
			1200.	3.84	34.95	1500.	4.05	34.95

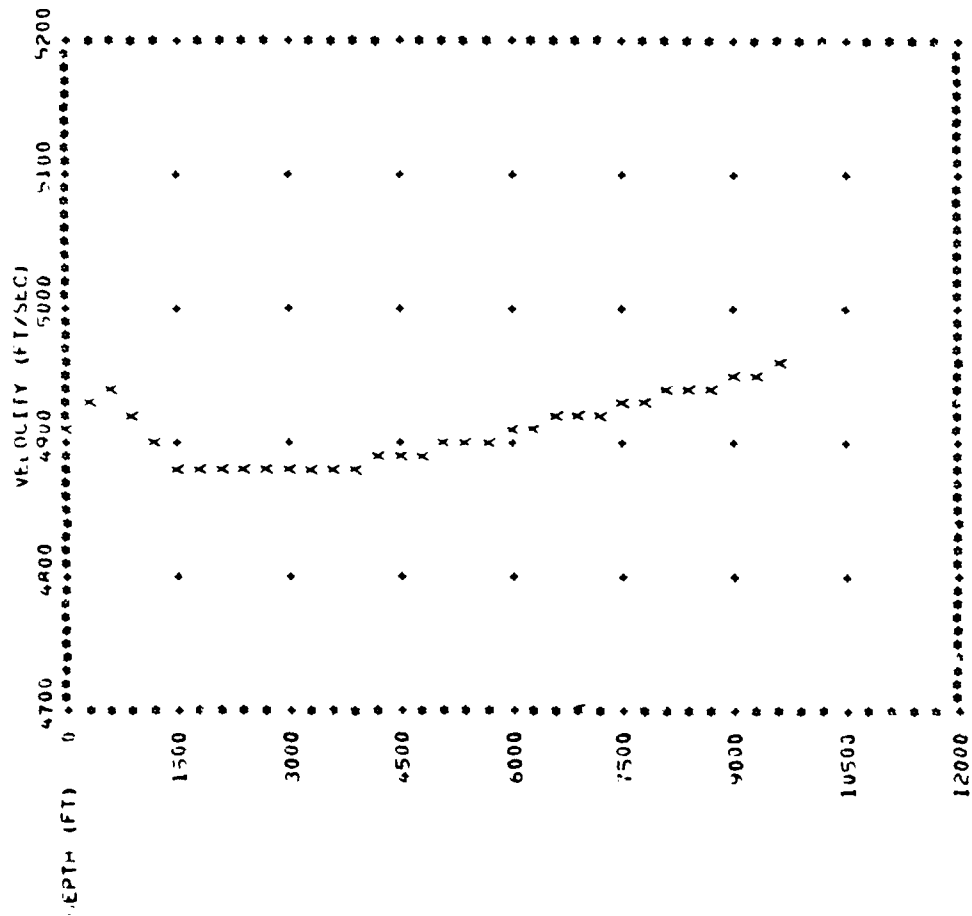


2000. 3.41 34.95 2500. 3.15 34.95  
 250 34.95 3000. 2.62 34.95  
 3000. 2.60 34.92

\*\*\*\*\*ICAPS GENERATED SOUND VELOCITY PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
0.00	0.00	12.86	55.15	32.41	1497.166	4912.200
35.00	114.84	13.14	55.65	32.62	1498.940	4918.022
48.00	157.49	13.68	56.62	32.77	1501.140	4925.259
118.00	387.16	14.20	57.56	33.95	1505.450	4939.415
133.00	436.37	14.86	58.75	34.14	1508.062	4947.952
147.00	482.31	13.37	56.07	34.28	1503.609	4933.340
148.00	649.64	13.40	56.12	34.58	1504.915	4937.627
221.00	725.10	12.50	54.50	34.67	1502.375	4929.292
240.00	951.49	11.14	52.05	34.87	1499.056	4918.401
347.00	1138.51	9.00	48.20	34.89	1492.246	4886.058
395.00	1296.00	8.60	47.48	34.88	1491.522	4893.683
407.00	1335.37	7.90	46.22	34.88	1489.060	4885.605
477.00	1565.04	7.03	44.65	34.90	1486.868	4878.413
500.00	1968.60	6.35	43.43	34.93	1486.253	4876.396
500.00	2624.80	5.51	41.91	34.95	1486.200	4876.222
1000.00	3281.00	4.91	40.83	34.95	1487.064	4879.058
1200.00	3937.20	4.44	40.06	34.95	1488.627	4884.185
1500.00	4921.50	4.05	39.29	34.95	1491.865	4894.809
2000.00	6562.00	3.55	38.39	34.95	1498.221	4915.664
2500.00	8202.50	3.15	37.67	34.95	1505.037	4934.026
3000.00	9843.00	2.62	36.72	34.95	1511.416	4958.955

\*\*\*VELOCITY PROFILE\*\*\*



\*\*\*\*\*HISTORICAL PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
0.00	0.00	25.05	77.09	38.68	1539.076	5049.709
10.00	32.81	24.45	76.01	38.69	1537.877	5045.774
20.00	65.62	22.05	73.13	38.63	1534.092	5013.355
30.00	98.43	20.45	68.81	38.56	1528.024	5013.447
50.00	164.05	17.46	63.43	38.55	1520.021	4987.189
75.00	246.08	16.03	60.85	38.65	1516.303	4974.990
100.00	328.10	15.44	59.79	38.72	1514.993	4970.692
125.00	410.13	15.20	59.36	38.77	1514.721	4969.800
150.00	492.15	15.04	59.07	38.81	1514.682	4969.672
200.00	656.20	14.85	58.73	38.85	1514.957	4970.573
250.00	820.25	14.68	58.42	38.86	1515.255	4971.551
300.00	984.30	14.53	58.15	38.86	1515.601	4972.688
400.00	1312.40	14.28	57.70	38.84	1516.424	4975.388
500.00	1640.50	14.09	57.36	38.82	1517.436	4978.709
600.00	1968.60	13.94	57.09	38.79	1518.564	4982.408
800.00	2624.80	13.78	56.80	38.76	1521.311	4991.420
1000.00	3281.00	13.70	56.66	38.74	1524.337	5001.348
1200.00	3937.20	13.56	56.59	38.72	1527.501	5011.730
1500.00	4921.50	13.66	56.59	38.71	1532.484	5028.081
2000.00	6562.00	13.67	56.61	38.69	1540.862	5055.569
2500.00	8202.50	13.67	56.61	38.68	1549.275	5083.170
3000.00	9843.00	13.71	56.68	38.65	1557.843	5111.284

HISTORICAL DATA

(MERGE FACTOR = 700\*10\*\*-3)

HT DATA

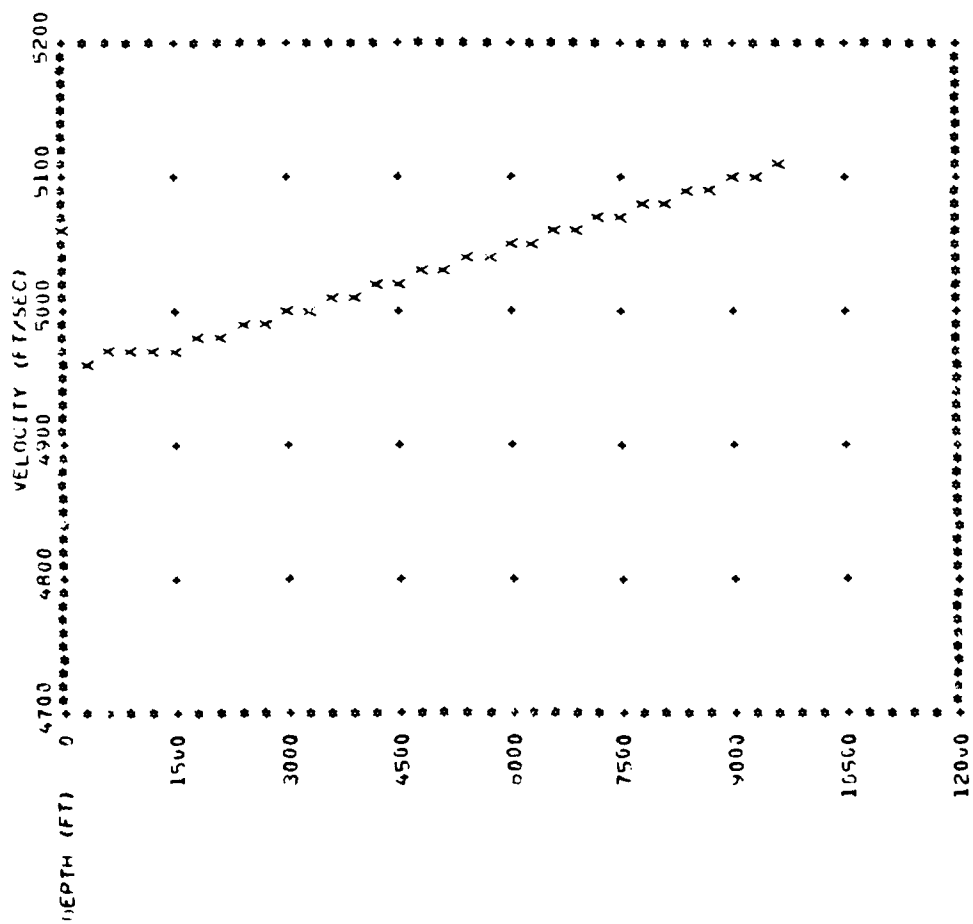
DEPTH (M)	TEMP (C)	SAL (PPT)	DEPTH (M)	TEMP (C)	SAL (PPT)
0.	25.24	38.68	0.	26.24	38.68
18.	26.14	38.64	18.	26.14	38.64
22.	21.97	38.62	22.	21.97	38.62
41.	16.62	38.55	41.	16.62	38.55
59.	15.00	38.59	59.	15.00	38.59
64.	14.70	38.61	64.	14.70	38.61
135.	14.85	38.79	135.	14.85	38.79
443.	13.94	38.83	443.	13.94	38.83
			500.	13.91	38.82
			600.	13.81	38.79
			800.	13.72	38.76
			1000.	13.67	38.74
			1200.	13.65	38.72
			1500.	13.65	38.71
			2000.	13.67	38.69
			2500.	13.67	38.68
			3000.	13.71	38.68

1500. 13.66 33.71  
2000. 13.67 34.69  
2500. 13.67 38.68  
3000. 13.71 34.65

\*\*\*\*\*ICAPS GENERATED SOUND VELOCITY PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
0.00	0.00	26.24	79.23	38.68	1541.780	5058.581
18.00	59.06	26.14	79.05	38.64	1541.812	5058.686
22.00	72.18	21.97	71.55	38.62	1531.906	5026.182
41.00	134.52	16.62	61.92	38.55	1517.404	4978.603
59.00	193.58	15.00	59.00	38.59	1512.788	4963.457
64.00	209.98	14.70	58.46	38.61	1511.952	4960.714
135.00	442.94	14.85	58.73	38.79	1513.811	4966.815
443.00	1453.48	13.94	57.09	38.83	1516.030	4974.094
500.00	1640.50	13.91	57.04	38.82	1516.854	4976.799
600.00	1968.60	13.81	56.86	38.79	1518.155	4981.066
800.00	2624.80	13.72	56.69	38.76	1521.109	4990.760
1000.00	3281.00	13.67	56.61	38.74	1524.238	5001.024
1200.00	3937.20	13.65	56.56	38.72	1527.452	5011.571
1500.00	4921.50	13.65	56.58	38.71	1532.468	5028.026
2000.00	6562.00	13.67	56.60	38.69	1540.860	5055.560
2500.00	8202.50	13.67	56.61	38.68	1549.274	5083.168
3000.00	9843.00	13.71	56.68	38.68	1557.881	5111.409

\*\*\*VELOCITY PROFILE\*\*\*



## APPENDIX C

### SIMAS Generated SSP'S (CDC Version)

SECTION	CONTENTS
C1	SIMAS Historical Near-surface Salinities
C2	35 PPT Near-surface Salinity for Sites FIF, AIF&F2H
C3	Detailed BT and SIMAS Historical Profiles
C4	ICAPS Environmental Profiles and Detailed BT Data

APPENDIX C

Section C1

SIMAS Historical Near-surface Salinities

SIMAS: HISTORICAL DATA FEBIC SHORT HT

HISTORICAL PROFILE - THE NEAR-SURFACE AVERAGE SALINITY IS 35.00 PPT.

NO. DEPTH VELOCITY

1	0.0	4955.5
2	250.0	4958.0
3	300.0	4956.0
4	500.0	4944.0
5	1000.0	4920.0
6	1250.0	4905.0
7	1500.0	4890.0
8	1750.0	4876.0
9	2000.0	4866.0
10	2250.0	4859.0
11	2500.0	4855.0
12	2750.0	4854.0
13	3000.0	4856.0
14	3250.0	4857.0
15	3500.0	4859.0
16	4000.0	4864.0
17	4500.0	4869.0
18	5000.0	4874.0
19	6000.0	4885.0
20	7000.0	4899.0
21	9000.0	4930.0
22	12000.0	4979.0
23	15000.0	5031.0
24	18556.8	5095.0

INPUT DATA FOR BT - METRIC

NO.	DEPTH	TEMP
1	0.0	17.1
2	98.0	17.2
3	152.0	17.0
4	156.0	16.2
5	476.0	9.9

PROBABLE ERROR IN XHT

HISTORICAL DATA

NO.	DEPTH	VEL
1	0.0	4955.5
2	250.0	4958.0
3	300.0	4956.0
4	500.0	4944.0
5	1000.0	4920.0

XHT DATA

NO.	DEPTH	VEL
1	0.0	4967.1
2	321.5	4973.0
3	498.7	4974.0
4	511.8	4955.9
5	1000.0	4941.7



1250.0 4905.0 0 1561.8 4713.7  
0.0 1490

RECOMMEND NEW HT BE TAKEN

ART DATA WILL BE ADJUSTED TO  
USE LAYER DEPTH INDICATED BY ART AND  
HISTORICAL DATA BELOW LAYER

CORRECTED BOTTOM DEPTH IS 3093 FATHOMS  
LAYER DEPTH IS 499 FEET  
SOUND VELOCITY AT SURFACE IS 4955.5 FT/SEC

# SIMAS GENERATED SOUND VELOCITY PROFILE

NO.	DEPTH	VELOCITY
1	0.0	4955.5
2	494.7	4963.7
3	500.0	4944.0
4	1000.0	4920.0
5	1250.0	4905.0
6	1500.0	4890.0
7	1750.0	4876.0
8	2000.0	4866.0
9	2250.0	4859.0
10	2500.0	4855.0
11	2750.0	4854.0
12	3000.0	4856.0
13	3250.0	4857.0
14	3500.0	4859.0
15	4000.0	4864.0
16	4500.0	4869.0
17	5000.0	4874.0
18	6000.0	4885.0
19	7000.0	4899.0
20	9000.0	4930.0
21	12000.0	4979.0
22	15000.0	5031.0
23	18556.8	5095.0

# SIMAS: HISTORICAL DATA FEBIF SHORI HT

HISTORICAL PROFILE - THE NEAR-SURFACE AVERAGE SALINITY IS 34.00 PPT.

NO.	DEPTH	VELOCITY
1	0.0	4876.0
2	300.0	4880.5
3	600.0	4886.0
4	750.0	4890.0
5	1000.0	4870.0
6	1250.0	4859.0
7	1500.0	4852.0
8	1750.0	4848.0
9	2000.0	4846.0
10	2250.0	4846.0
11	2500.0	4847.0
12	2750.0	4849.0
13	3000.0	4851.0
14	3250.0	4853.0
15	3500.0	4855.0
16	4000.0	4860.0
17	4500.0	4864.0
18	5000.0	4871.0
19	6000.0	4883.0
20	7000.0	4899.0
21	9000.0	4930.0
22	12000.0	4979.0
23	15000.0	5031.0
24	15999.8	5049.0

## INPUT DATA FOR BT - METRIC

NO.	DEPTH	TEMP
1	0.0	12.3
2	109.0	12.3
3	117.0	12.1
4	126.0	11.2
5	134.0	10.8
6	497.0	5.4

## PROBABLE ERROR IN XBT

HISTORICAL DATA		XBT DATA	
DEPTH	VEL	DEPTH	VEL
1	0.0	4876.0	
2	300.0	4880.5	
3	600.0	4886.0	
4	750.0	4890.0	
1	0.0	0.0	4912.1
2	357.6	357.6	4918.2
3	383.9	383.9	4915.8
4	413.4	413.4	4915.7

5	1000.0	4871	5	430	4000.7
6	1250.0	4859.0	6	1000.0	4000.5
7	1500.0	4852.0	7	1630.7	4854.4

RECOMMEND NEW BT BE TAKEN

XHT DATA WILL BE ADJUSTED TO  
USE LAYER DEPTH INDICATED BY XHT AND  
HISTORICAL DATA BELOW LAYER

CORRECTED BOTTOM DEPTH IS 2667 FATHOMS  
LAYER DEPTH IS 358 FEET  
SOUND VELOCITY AT SURFACE IS 4876.0 FT/SEC

# SIMAS GENERATED SOUND VELOCITY PROFILE

NO.	DEPTH	VELOCITY
1	0.0	4876.0
2	357.6	4882.1
3	750.0	4880.0
4	1000.0	4870.0
5	1250.0	4859.0
6	1500.0	4852.0
7	1750.0	4848.0
8	2000.0	4846.0
9	2250.0	4846.0
10	2500.0	4847.0
11	2750.0	4849.0
12	3000.0	4851.0
13	3250.0	4853.0
14	3500.0	4855.0
15	4000.0	4860.0
16	4500.0	4864.0
17	5000.0	4871.0
18	6000.0	4883.0
19	7000.0	4899.0
20	9000.0	4930.0
21	12000.0	4979.0
22	15000.0	5031.0
23	15999.8	5049.0

SIMAS: HISTORICAL DATA AUGIF SHORT HT

HISTORICAL PROFILE - THE NEAR-SURFACE AVERAGE SALINITY IS 34.00 PPT.

NO.	DEPTH	VELOCITY
1	0.0	4964.0
2	35.0	4964.1
3	150.0	4916.0
4	350.0	4889.0
5	600.0	4886.0
6	1000.0	4869.0
7	1250.0	4859.0
8	1500.0	4852.0
9	1750.0	4848.0
10	2000.0	4846.0
11	2250.0	4846.0
12	2500.0	4847.0
13	2750.0	4849.0
14	3000.0	4851.0
15	3250.0	4853.0
16	3500.0	4855.0
17	4000.0	4860.0
18	4500.0	4864.0
19	5000.0	4871.0
20	6000.0	4883.0
21	7000.0	4899.0
22	9000.0	4930.0
23	12000.0	4979.0
24	15000.0	5031.0
25	16003.0	5049.1

INPUT DATA FOR HT - METRIC

NO.	DEPTH	TEMP
1	0.0	14.8
2	30.0	14.7
3	36.0	11.0
4	55.0	9.1
5	113.0	7.6
6	147.0	7.6
7	155.0	8.0
8	196.0	8.1
9	344.0	6.0
10	457.0	4.8

PROBABLE ERROR IN AHT

HISTORICAL DATA

DEPTH	VEL	AHT DATA	DEPTH	VEL
-------	-----	----------	-------	-----

1	0.0	4964.0	1	0.0	4939.4
2	15.0	496	2	9.0	4939.9
3	150.0	4910.0	3	114.1	4899.5
4	350.0	4889.0	4	180.5	4877.4
5	600.0	4846.0	5	370.8	4861.9
6	1000.0	4869.0	6	442.3	4863.3
7	1250.0	4859.0	7	504.6	4868.7
8	1500.0	4852.0	8	643.1	4872.6
			9	1000.0	4858.5
			10	1128.7	4853.4
			11	1499.4	4843.5

RECOMMEND NEW BT BE TAKEN

XBT DATA WILL BE ADJUSTED TO  
USE LAYER DEPTH INDICATED BY XBT AND  
HISTORICAL DATA BELOW LAYER

CORRECTED BOTTOM DEPTH IS 2667 FATHOMS  
LAYER DEPTH IS 98 FEET  
SOUND VELOCITY AT SURFACE IS 4964.0 FT/SEC

# SIMAS GENERATED SOUND VELOCITY PROFILE

NO.	DEPTH	VELOCITY
1	0.0	4964.0
2	98.4	4965.6
3	150.0	4916.0
4	350.0	4889.0
5	600.0	4886.0
6	1000.0	4869.0
7	1250.0	4859.0
8	1500.0	4852.0
9	1750.0	4848.0
10	2000.0	4846.0
11	2250.0	4846.0
12	2500.0	4847.0
13	2750.0	4849.0
14	3000.0	4851.0
15	3250.0	4853.0
16	3500.0	4855.0
17	4000.0	4860.0
18	4500.0	4864.0
19	5000.0	4871.0
20	6000.0	4883.0
21	7000.0	4899.0
22	9000.0	4930.0
23	12000.0	4979.0
24	15000.0	5031.0
25	16003.0	5049.1

SIMAS: HISTORICAL DATA FEB2A SHORT RT

HISTORICAL PROFILE - IMF NEAR-SURFACE AVERAGE SALINITY IS 35.50 PPT.

NO.	DEPTH	VELOCITY
1	0.0	5024.0
2	100.0	5025.0
3	200.0	5010.0
4	300.0	4952.0
5	500.0	4929.0
6	750.0	4920.0
7	1000.0	4915.0
8	1250.0	4910.0
9	1500.0	4905.0
10	1750.0	4899.0
11	2000.0	4892.0
12	2250.0	4886.0
13	2500.0	4879.0
14	2750.0	4876.0
15	3000.0	4877.0
16	3250.0	4879.0
17	3500.0	4880.0
18	4000.0	4885.0
19	4500.0	4891.0
20	5000.0	4898.0
21	6000.0	4909.0
22	7000.0	4920.0
23	9000.0	4949.0
24	12000.0	4995.0
25	15000.0	5044.0
26	17032.2	5077.9

INPUT DATA FOR BT - METRIC

NO.	DEPTH	TEMP
1	0.0	25.6
2	26.0	25.6
3	87.0	24.6
4	98.0	22.3
5	137.0	18.0
6	216.0	13.7
7	345.0	10.8
8	455.0	9.4

PROBABLE ERROR IN XBT

HISTORICAL DATA	XBT DATA
DEPTH	DEPTH
VEL	VEL

	1	0	51
2	1024	45.3	5043.4
3	100.0	285.4	5039.0
4	200.0	321.5	5021.4
5	300.0	449.5	4984.7
6	400.0	708.7	4945.3
7	500.0	1000.0	4927.7
8	600.0	1131.9	4919.8
9	700.0	1442.9	4909.3

RECOMMEND NEW BT BE TAKEN

XBT DATA WILL BE ADJUSTED TO  
USE LAYER DEPTH INDICATED BY XBT AND  
HISTORICAL DATA BELOW LAYER

CORRECTED BOTTOM DEPTH IS 2839 FATHOMS  
LAYER DEPTH IS 85 FEET  
SOUND VELOCITY AT SURFACE IS 5024.0 FT/SEC

# SIMAS GENERATED SOUND VELOCITY PROFILE

NO.	DEPTH	VELOCITY
1	0.0	5024.0
2	85.3	5025.4
3	100.0	5025.0
4	200.0	5010.0
5	300.0	4952.0
6	500.0	4929.0
7	750.0	4920.0
8	1000.0	4915.0
9	1250.0	4910.0
10	1500.0	4905.0
11	1750.0	4899.0
12	2000.0	4892.0
13	2250.0	4886.0
14	2500.0	4879.0
15	2750.0	4876.0
16	3000.0	4877.0
17	3250.0	4879.0
18	3500.0	4880.0
19	4000.0	4885.0
20	4500.0	4891.0
21	5000.0	4898.0
22	6000.0	4909.0
23	7000.0	4920.0
24	8000.0	4949.0
25	12000.0	4995.0
26	15000.0	5044.0
27	17032.2	5077.9

SIMAS: HISTORICAL DATA FEB2 SHORT HI

# HISTORICAL PROFILE - THE NEAR-SURFACE AVERAGE SALINITY IS 35.50 PPT.

NO.	DEPTH	VELOCITY
1	0.0	4911.0
2	500.0	4919.0
3	750.0	4922.0
4	1000.0	4926.0
5	1250.0	4928.0
6	1500.0	4928.0
7	1750.0	4926.0
8	2000.0	4925.0
9	2250.0	4923.0
10	2500.0	4920.0
11	2750.0	4917.0
12	3000.0	4914.0
13	3250.0	4910.0
14	3500.0	4906.0
15	4000.0	4902.0
16	4500.0	4902.0
17	5000.0	4903.0
18	6000.0	4909.0
19	7000.0	4920.0
20	9000.0	4949.0
21	12000.0	4995.0
22	15151.3	5046.5

## INPUT DATA FOR BT - METRIC

NO.	TEMP
1	0.0
2	8.0
3	372.0
4	493.0
	10.6

CORRECTED BOTTOM DEPTH IS 2525 FATHOMS  
 LAYER DEPTH IS 1618 FEET  
 SOUND VELOCITY AT SURFACE IS 4907.9 FT/SEC

## SIMAS GENERATED SOUND VELOCITY PROFILE

NO.	DEPTH	VELOCITY
1	0.0	4907.9
2	26.2	4913.4
3	1000.0	4926.0
4	1220.5	4928.8
5	1617.5	4930.2



7	500.0	4925.0
8	2500.0	4920.0
9	2500.0	4917.0
10	2750.0	4914.0
11	3000.0	4910.0
12	3250.0	4906.0
13	3500.0	4902.0
14	4000.0	4902.0
15	4500.0	4903.0
16	5000.0	4909.0
17	6000.0	4920.0
18	7000.0	4949.0
19	9000.0	4995.0
20	12000.0	5046.5
21	15151.3	

SIMAS: HISTORICAL DATA AUG2E SHORT HT

HISTORICAL PROFILE - THE NEAR-SURFACE AVERAGE SALINITY IS 35.50 PPT.

NO.	DEPTH	VELOCITY
1	0.0	4972.0
2	100.0	4974.0
3	250.0	4940.0
4	500.0	4928.0
5	1000.0	4927.0
6	1250.0	4924.0
7	1500.0	4924.0
8	1750.0	4926.0
9	2000.0	4925.0
10	2250.0	4923.0
11	2500.0	4920.0
12	2750.0	4917.0
13	3000.0	4914.0
14	3250.0	4910.0
15	3500.0	4906.0
16	4000.0	4902.0
17	4500.0	4902.0
18	5000.0	4903.0
19	6000.0	4909.0
20	7000.0	4920.0
21	9000.0	4949.0
22	12000.0	4995.0
23	15155.4	5046.5

INPUT DATA FOR BT - METRIC

NO.	DEPTH	TEMP
1	0.0	19.0
2	22.0	19.0
3	27.0	18.8
4	29.0	17.1
5	37.0	15.3
6	53.0	14.1
7	122.0	13.9
8	414.0	11.4

CORRECTED BOTTOM DEPTH IS 2526 FATHOMS  
 LAYER DEPTH IS 72 FEET  
 SOUND VELOCITY AT SURFACE IS 4978.9 FT/SEC

SIMAS GENERATED SOUND VELOCITY PROFILE

NO. DEPTH VELOCITY

1	0.0	4078.9
2	72.0	4088.1
3	88.6	4078.5
4	95.1	4082.0
5	121.0	4044.7
6	173.9	4032.9
7	400.3	4034.5
8	1000.0	4027.0
9	1354.3	4022.5
10	1500.0	4028.0
11	1750.0	4026.0
12	2000.0	4025.0
13	2250.0	4023.0
14	2500.0	4020.0
15	2750.0	4017.0
16	3000.0	4014.0
17	3250.0	4010.0
18	3500.0	4006.0
19	4000.0	4002.0
20	4500.0	4002.0
21	5000.0	4003.0
22	6000.0	4009.0
23	7000.0	4020.0
24	9000.0	4049.0
25	12000.0	4095.0
26	15155.4	5046.5

SIMAS: HISTORICAL DATA FEB2H SHORI HT

HISTORICAL PROFILE - THE NEAR-SURFACE AVERAGE SALINITY IS 35.00 PPT.

NO.	DEPTH	VELOCITY
1	0.0	4855.0
2	150.0	4861.0
3	300.0	4880.0
4	550.0	4914.0
5	700.0	4910.0
6	1000.0	4884.0
7	1250.0	4868.0
8	1500.0	4862.0
9	1750.0	4858.0
10	2000.0	4856.0
11	2250.0	4858.0
12	2500.0	4860.0
13	2750.0	4862.0
14	3000.0	4864.0
15	3250.0	4867.0
16	3500.0	4870.0
17	4000.0	4876.0
18	4500.0	4884.0
19	5000.0	4891.0
20	6000.0	4906.0
21	7000.0	4920.0
22	9000.0	4949.0
23	10105.9	4966.0

INPUT DATA FOR BT - METRIC

NO.	DEPTH	TEMP
1	0.0	12.9
2	35.0	13.1
3	48.0	13.7
4	118.0	14.2
5	133.0	14.9
6	147.0	13.4
7	198.0	13.4
8	221.0	12.5
9	290.0	11.1
10	347.0	9.0
11	395.0	8.6
12	407.0	7.9
13	477.0	7.0

PROBABLY ERROR IN XHT

HISTORICAL DATA XHT DATA  
DEPTH VFL DEPTH VFL

2	150.0	455.	1	0.0	4922.5
3	300.0	451.0	2	114.0	4921.5
4	550.0	440.0	3	157.5	4934.1
5	700.0	4414.0	4	387.2	4943.4
6	1000.0	4410.0	5	436.4	4951.2
7	1250.0	4444.0	6	442.3	4936.0
8	1500.0	4468.0	7	649.6	4939.1
		4862.0	8	725.1	4930.4
			9	951.5	4918.7
			10	1000.0	4912.8
			11	1138.5	4896.2
			12	1246.0	4893.9
			13	1335.4	4845.8
			14	1565.0	4878.6

# RECOMMEND NEW BT BE TAKEN

ABT DATA WILL BE ADJUSTED TO  
USE LAYER DEPTH INDICATED BY ABT AND  
HISTORICAL DATA BELOW LAYER

CORRECTED BOTTOM DEPTH IS 1684 FATHOMS  
LAYER DEPTH IS 115 FEET  
SOUND VELOCITY AT SURFACE IS 4861.0 FT/SEC

## SIMAS GENERATED SOUND VELOCITY PROFILE

NO.	DEPTH	VELOCITY
1	0.0	4861.0
2	114.8	4866.0
3	150.0	4861.0
4	300.0	4880.0
5	550.0	4914.0
6	700.0	4910.0
7	1000.0	4884.0
8	1250.0	4868.0
9	1500.0	4862.0
10	1750.0	4858.0
11	2000.0	4856.0
12	2250.0	4858.0
13	2500.0	4860.0
14	2750.0	4862.0
15	3000.0	4864.0
16	3250.0	4867.0
17	3500.0	4870.0
18	4000.0	4876.0
19	4500.0	4884.0
20	5000.0	4891.0
21	6000.0	4906.0
22	7000.0	4920.0
23	8000.0	4949.0
24	10105.9	4966.0

SIMAS: HISTORICAL DATA AUG3A SHORT HT

HISTORICAL PROFILE - THE NEAR-SURFACE AVERAGE SALINITY IS 34.00 PPT.

NO.	DEPTH	VELOCITY
1	0.0	5056.5
2	30.0	5057.0
3	50.0	5074.0
4	100.0	5010.0
5	200.0	4990.0
6	350.0	4977.5
7	600.0	4975.8
8	1500.0	4977.0
9	3000.0	4997.0
10	4200.0	5016.0
11	7200.0	5066.0
12	9614.5	5107.0

INPUT DATA FOR HT - METRIC

NO.	DEPTH	TEMP
1	0.0	26.2
2	18.0	26.1
3	22.0	22.0
4	41.0	16.6
5	59.0	15.0
6	64.0	14.7
7	135.0	14.9
8	443.0	13.9

PROBABLE ERROR IN XBT

HISTORICAL DATA		XBT DATA	
DEPTH	VEL	DEPTH	VEL
1	0.0	1	5055.9
2	30.0	2	5056.1
3	50.0	3	5023.8
4	100.0	4	4976.2
5	200.0	5	4960.8
6	350.0	6	4957.9
7	600.0	7	4963.3
8	1000.0	8	4967.3
9	1500.0	9	4910.4

COMMON NEW BE T-10

XRT DATA WILL BE ADJUSTED TO  
USE LAYER DEPTH INDICATED BY XBT AND  
HISTORICAL DATA BELOW LAYER

CORRECTED BOTTOM DEPTH IS 1602 FATHOMS  
LAYER DEPTH IS 59 FEET  
SOUND VELOCITY AT SURFACE IS 5056.5 FT/SEC

SIMAS GENERATED SOUND VELOCITY PROFILE

NO.	DEPTH	VELOCITY
1	0.0	5056.5
2	59.1	5057.5
3	100.0	5010.0
4	200.0	4990.0
5	350.0	4977.5
6	600.0	4975.8
7	1000.0	4976.3
8	1500.0	4977.0
9	3000.0	4997.0
10	4200.0	5016.0
11	7200.0	5066.0
12	9614.5	5107.0

APPENDIX C

Section C2

35 PPT Near-surface Salinity for Sites FIF, AIF&F2H



SIMAS: HISTORICAL DATA FEHIF SHORT HT

HISTORICAL PROFILE - THE NEAR-SURFACE AVERAGE SALINITY IS 35.00 PPT.

NO.	DEPTH	VELOCITY
1	0.0	4876.0
2	300.0	4880.5
3	600.0	4886.0
4	750.0	4880.0
5	1000.0	4870.0
6	1250.0	4859.0
7	1500.0	4852.0
8	1750.0	4849.0
9	2000.0	4846.0
10	2250.0	4846.0
11	2500.0	4847.0
12	2750.0	4849.0
13	3000.0	4851.0
14	3250.0	4853.0
15	3500.0	4855.0
16	4000.0	4860.0
17	4500.0	4864.0
18	5000.0	4871.0
19	6000.0	4883.0
20	7000.0	4899.0
21	9000.0	4930.0
22	12000.0	4979.0
23	15000.0	5031.0
24	15999.8	5049.0

INPUT DATA FOR BT - METRIC

NO.	DEPTH	TEMP
1	0.0	12.3
2	109.0	12.3
3	117.0	12.1
4	126.0	11.2
5	134.0	10.8
6	497.0	5.4

PROBABLE ERROR IN AHT

HISTORICAL DATA		AHT DATA	
DEPTH	VEL	DEPTH	VEL
1	0.0	4876.0	
2	300.0	4880.5	
1	0.0	0.0	4916.2
2		157.6	4922.3
3		243.4	4910.0

2	750.0	4880.0	4	413.4	4907.9
3	1000.0	4905.0	5	39.7	4905.0
6	1250.0	4859.0	6	1000.0	4865.1
7	1500.0	4852.0	7	1630.7	4858.8

RECOMMEND NEW BT BE TAKEN

XBT DATA WILL BE ADJUSTED TO  
USE LAYER DEPTH INDICATED BY XBT AND  
HISTORICAL DATA BELOW LAYER

CORRECTED BOTTOM DEPTH IS 2667 FATHOMS  
LAYER DEPTH IS 358 FEET  
SOUND VELOCITY AT SURFACE IS 4876.0 FT/SEC

# SIMAS GENERATED SOUND VELOCITY PROFILE

NO.	DEPTH	VELOCITY
1	0.0	4876.0
2	357.6	4882.1
3	750.0	4880.0
4	1000.0	4870.0
5	1250.0	4859.0
6	1500.0	4852.0
7	1750.0	4848.0
8	2000.0	4846.0
9	2250.0	4846.0
10	2500.0	4847.0
11	2750.0	4849.0
12	3000.0	4851.0
13	3250.0	4853.0
14	3500.0	4855.0
15	4000.0	4860.0
16	4500.0	4864.0
17	5000.0	4871.0
18	6000.0	4883.0
19	7000.0	4899.0
20	9000.0	4930.0
21	12000.0	4979.0
22	15000.0	5031.0
23	15999.8	5049.0

SIMAS: HISTORICAL DATA AUGIF SHORT HY

HISTORICAL PROFILE - THE NEAR-SURFACE AVERAGE SALINITY IS 35.00 PPT.

NO.	DEPTH	VELOCITY
1	0.0	4964.0
2	35.0	4964.1
3	150.0	4915.0
4	350.0	4889.0
5	600.0	4886.0
6	1000.0	4869.0
7	1250.0	4859.0
8	1500.0	4852.0
9	1750.0	4848.0
10	2000.0	4846.0
11	2250.0	4846.0
12	2500.0	4847.0
13	2750.0	4849.0
14	3000.0	4851.0
15	3250.0	4853.0
16	3500.0	4855.0
17	4000.0	4860.0
18	4500.0	4864.0
19	5000.0	4871.0
20	6000.0	4883.0
21	7000.0	4899.0
22	9000.0	4930.0
23	12000.0	4979.0
24	15000.0	5031.0
25	16003.0	5049.1

INPUT DATA FOR BT - METRIC

NO.	DEPTH	TEMP
1	0.0	14.8
2	30.0	14.7
3	36.0	11.0
4	55.0	9.1
5	113.0	7.6
6	147.0	7.6
7	155.0	8.0
8	196.0	8.1
9	344.0	6.0
10	457.0	4.8

CORRECTED BOTTOM DEPTH IS 2667 FATHOMS  
 LAYER DEPTH IS 94 FEET  
 SOUND VELOCITY AT SURFACE IS 4949.6 FT/SEC

# SIMAS GENERATED SOUND VELOCITY FILE

NO.	DEPTH	VELOCITY
1	0.0	4949.6
2	98.4	4950.2
3	118.1	4909.8
4	180.5	4887.8
5	370.8	4872.3
6	482.3	4873.8
7	538.6	4879.1
8	643.1	4883.1
9	1000.0	4869.0
10	1128.7	4863.9
11	1499.4	4854.1
12	1500.0	4852.0
13	1750.0	4848.0
14	2000.0	4846.0
15	2250.0	4846.0
16	2500.0	4847.0
17	2750.0	4849.0
18	3000.0	4851.0
19	3250.0	4853.0
20	3500.0	4855.0
21	4000.0	4860.0
22	4500.0	4864.0
23	5000.0	4871.0
24	6000.0	4883.0
25	7000.0	4899.0
26	9000.0	4930.0
27	12000.0	4979.0
28	15000.0	5031.0
29	16003.0	5049.1

SIMAS: HISTORICAL DATA FEB2A SHORT HT

HISTORICAL PROFILE - THE NEAR-SURFACE AVERAGE SALINITY IS 35.00 PPT.

NO.	DEPTH	VELOCITY
1	0.0	5024.0
2	100.0	5025.0
3	200.0	5010.0
4	300.0	4952.0
5	500.0	4929.0
6	750.0	4920.0
7	1000.0	4915.0
8	1250.0	4910.0
9	1500.0	4905.0
10	1750.0	4899.0
11	2000.0	4892.0
12	2250.0	4886.0
13	2500.0	4879.0
14	2750.0	4876.0
15	3000.0	4877.0
16	3250.0	4879.0
17	3500.0	4880.0
18	4000.0	4885.0
19	4500.0	4891.0
20	5000.0	4898.0
21	6000.0	4909.0
22	7000.0	4920.0
23	9000.0	4949.0
24	12000.0	4995.0
25	15000.0	5044.0
26	17032.2	5077.9

INPUT DATA FOR BT - METHIC

NO.	DEPTH	TEMP
1	0.0	25.6
2	26.0	25.6
3	87.0	24.6
4	98.0	22.3
5	137.0	18.0
6	216.0	13.7
7	345.0	10.8
8	455.0	9.4

PROBABLE ERROR IN XBT

HISTORICAL DATA	XBT DATA
DEPTH	DEPTH
VEL	VEL

	1	0	5000
2	100.0	024	5025.0
3	200.0	5010.0	5010.0
4	300.0	4952.0	5019.5
5	500.0	4929.0	4982.7
6	750.0	4920.0	4943.2
7	1000.0	4915.0	4925.6
8	1250.0	4910.0	4917.7
9	1500.0	4905.0	4907.2

RECOMMEND NEW HT BE TAKEN

XBT DATA WILL BE ADJUSTED TO  
USE LAYER DEPTH INDICATED BY XBT AND  
HISTORICAL DATA BELOW LAYER

CORRECTED BOTTOM DEPTH IS 2839 FATHOMS  
LAYER DEPTH IS 85 FEET  
SOUND VELOCITY AT SURFACE IS 5024.0 FT/SEC

# SIMAS GENERATED SOUND VELOCITY PROFILE

NO.	DEPTH	VELOCITY
1	0.0	5024.0
2	85.3	5025.4
3	100.0	5025.0
4	200.0	5010.0
5	300.0	4952.0
6	500.0	4929.0
7	750.0	4920.0
8	1000.0	4915.0
9	1250.0	4910.0
10	1500.0	4905.0
11	1750.0	4899.0
12	2000.0	4892.0
13	2250.0	4886.0
14	2500.0	4879.0
15	2750.0	4876.0
16	3000.0	4877.0
17	3250.0	4879.0
18	3500.0	4880.0
19	4000.0	4885.0
20	4500.0	4891.0
21	5000.0	4898.0
22	6000.0	4909.0
23	7000.0	4920.0
24	9000.0	4949.0
25	12000.0	4995.0
26	15000.0	5044.0
27	17032.2	5077.9

APPENDIX C

Section C3

Detailed BT and SIMAS Historical Profiles

# SIMAS: HISTORICAL DATA FEB 68

HISTORICAL PROFILE - THE NEAR-SURFACE AVERAGE SALINITY IS 35.00 PPT.

NO.	DEPTH	VELOCITY
1	0.0	4955.5
2	250.0	4958.0
3	300.0	4956.0
4	500.0	4944.0
5	1000.0	4920.0
6	1250.0	4905.0
7	1500.0	4890.0
8	1750.0	4876.0
9	2000.0	4866.0
10	2250.0	4859.0
11	2500.0	4855.0
12	2750.0	4854.0
13	3000.0	4856.0
14	3250.0	4857.0
15	3500.0	4859.0
16	4000.0	4864.0
17	4500.0	4869.0
18	5000.0	4874.0
19	6000.0	4885.0
20	7000.0	4899.0
21	9000.0	4930.0
22	12000.0	4979.0
23	15000.0	5031.0
24	18556.8	5095.0

## INPUT DATA FOR BT - METRIC

NO.	DEPTH	TEMP
1	0.0	17.1
2	14.0	17.2
3	98.0	17.2
4	143.0	17.1
5	150.0	17.0
6	156.0	16.2
7	158.0	16.0
8	211.0	14.9
9	253.0	14.2
10	275.0	13.8
11	286.0	13.4
12	345.0	12.4
13	353.0	12.3
14	367.0	11.9
15	401.0	11.4
16	411.0	11.1
17	417.0	11.1
18	426.0	10.8
19	437.0	10.8
20	442.0	10.4
21	449.0	10.4
22	474.0	10.1



# PROBABLE ERROR IN XBT

## HISTORICAL DATA

DEPTH	VEL
1 0.0	4955.5
2 250.0	4958.0
3 300.0	4956.0
4 500.0	4944.0
5 1000.0	4920.0
6 1250.0	4905.0
7 1500.0	4890.0

## XBT DATA

DEPTH	VEL
1 0.0	4967.1
2 45.9	4968.8
3 321.5	4973.0
4 469.2	4974.8
5 492.2	4973.9
6 511.8	4965.9
7 518.4	4964.6
8 642.3	4955.3
9 830.1	4950.8
10 902.3	4947.5
11 944.9	4944.0
12 1000.0	4941.5
13 1131.9	4935.4
14 1158.2	4935.1
15 1204.1	4931.9
16 1315.7	4927.7
17 1348.5	4924.7
18 1368.2	4924.8
19 1397.7	4921.5
20 1433.8	4920.1
21 1450.2	4918.1
22 1473.2	4918.5
23 1561.8	4913.8

RECOMMEND NEW BT BE TAKEN

XBT DATA WILL BE ADJUSTED TO  
USE LAYER DEPTH INDICATED BY XBT AND  
HISTORICAL DATA BELOW LAYER

CORRECTED BOTTOM DEPTH IS 3093 FATHOMS

LAYER DEPTH IS 469 FEET

SOUND VELOCITY AT SURFACE IS 4955.5 FT/SEC

## SIMAS GENERATED SOUND VELOCITY PROFILE

NO.	DEPTH	VELOCITY
1	0.0	4955.5
2	469.2	4963.2
3	500.0	4944.0
4	1000.0	4920.0
5	1250.0	4905.0
6	1500.0	4890.0
7	1750.0	4876.0
8	2000.0	4866.0
9	2250.0	4859.0
10	2500.0	4855.0
11	2750.0	4854.0
12	3000.0	4856.0

13	1250	4000.0
14	3500.0	4000.0
15	4000.0	4000.0
16	4500.0	4000.0
17	5000.0	4000.0
18	6000.0	4000.0
19	7000.0	4000.0
20	9000.0	4000.0
21	12000.0	4000.0
22	15000.0	4000.0
23	18556.8	4000.0

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OCEAN DATA SYSTEMS INC ROCKVILLE MD

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THE CAUSE OF SOUND SPEED PROFILE DIFFERENCES BETWEEN ICAPS AND --ETC(U)

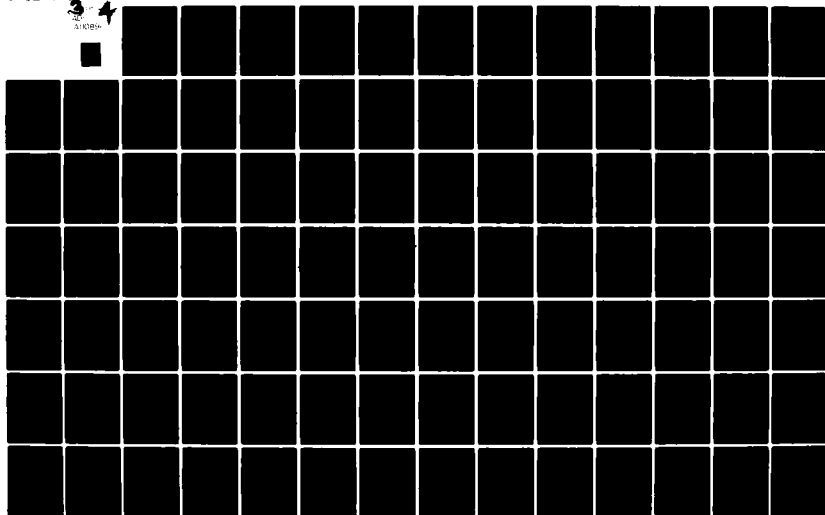
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# HISTORICAL PROFILE - THE NEAR-SURFACE AVERAGE SALINITY IS 34.00 PPT.

NO.	DEPTH	VELOCITY
1	0.0	4876.0
2	300.0	4880.5
3	600.0	4886.0
4	750.0	4880.0
5	1000.0	4870.0
6	1250.0	4859.0
7	1500.0	4852.0
8	1750.0	4848.0
9	2000.0	4846.0
10	2250.0	4846.0
11	2500.0	4847.0
12	2750.0	4849.0
13	3000.0	4851.0
14	3250.0	4853.0
15	3500.0	4855.0
16	4000.0	4860.0
17	4500.0	4864.0
18	5000.0	4871.0
19	6000.0	4883.0
20	7000.0	4899.0
21	9000.0	4930.0
22	12000.0	4979.0
23	15000.0	5031.0
24	15999.8	5049.0

## INPUT DATA FOR BT - METRIC

NO.	DEPTH	TEMP
1	0.0	12.3
2	93.0	12.4
3	109.0	12.3
4	117.0	12.1
5	126.0	11.2
6	131.0	11.0
7	134.0	10.8
8	155.0	10.4
9	169.0	10.3
10	177.0	10.1
11	194.0	9.9
12	202.0	9.7
13	220.0	9.5
14	234.0	9.1
15	304.0	8.3
16	387.0	7.0
17	425.0	6.2
18	437.0	6.1
19	445.0	6.1
20	456.0	5.8
21	497.0	5.4

# PROBABLE ERROR IN AHT

HISTORICAL DATA		AHT DATA	
DEPTH	VEL	DEPTH	VEL
1 0.0	4876.0	1 0.0	4912.1
2 300.0	4880.5	2 305.1	4917.9
3 600.0	4886.6	3 357.6	4918.2
4 750.0	4880.0	4 383.9	4915.8
5 1000.0	4870.0	5 413.4	4905.7
6 1250.0	4859.0	6 429.8	4904.4
7 1500.0	4852.0	7 439.7	4901.7
		8 508.6	4897.9
		9 554.5	4898.2
		10 580.7	4895.6
		11 636.5	4894.4
		12 662.8	4892.2
		13 721.8	4890.7
		14 767.8	4887.3
		15 997.4	4880.6
		16 1000.0	4880.5
		17 1269.7	4868.8
		18 1394.4	4861.2
		19 1433.8	4859.8
		20 1460.0	4860.8
		21 1496.1	4857.4
		22 1630.7	4854.4

RECOMMEND NEW BT BE TAKEN

AHT DATA WILL BE ADJUSTED TO  
USE LAYER DEPTH INDICATED BY AHT AND  
HISTORICAL DATA BELOW LAYER

CORRECTED BOTTOM DEPTH IS 2667 FATHOMS  
LAYER DEPTH IS 305 FEET  
SOUND VELOCITY AT SURFACE IS 4876.0 F/SEC

## SIMAS GENERATED SOUND VELOCITY PROFILE

NO.	DEPTH	VELOCITY
1	0.0	4876.0
2	305.1	4881.8
3	750.0	4880.0
4	1000.0	4870.0
5	1250.0	4859.0
6	1500.0	4852.0
7	1750.0	4848.0
8	2000.0	4846.0
9	2250.0	4846.0
10	2500.0	4847.0
11	2750.0	4849.0
12	3000.0	4851.0
13	3250.0	4853.0

14	3500.0	4860.0
15	4000.0	4860.0
16	4500.0	4864.0
17	5000.0	4871.0
18	6000.0	4883.0
19	7000.0	4899.0
20	9000.0	4930.0
21	12000.0	4979.0
22	15000.0	5031.0
23	15999.8	5049.0

# SIMASI HISTORICAL DATA

HISTORICAL PROFILE - THE NEAR-SURFACE AVERAGE SALINITY IS 34.00 PPT.

NO.	DEPTH	VELOCITY
1	0.0	4964.0
2	35.0	4964.1
3	150.0	4916.0
4	350.0	4889.0
5	600.0	4886.0
6	1000.0	4869.0
7	1250.0	4859.0
8	1500.0	4852.0
9	1750.0	4848.0
10	2000.0	4846.0
11	2250.0	4846.0
12	2500.0	4847.0
13	2750.0	4849.0
14	3000.0	4851.0
15	3250.0	4853.0
16	3500.0	4855.0
17	4000.0	4860.0
18	4500.0	4864.0
19	5000.0	4871.0
20	6000.0	4883.0
21	7000.0	4899.0
22	9000.0	4930.0
23	12000.0	4979.0
24	15000.0	5031.0
25	16003.0	5049.1

## INPUT DATA FOR BT - METRIC

NO.	DEPTH	TEMP
1	0.0	14.8
2	20.0	14.9
3	25.0	14.7
4	30.0	14.7
5	36.0	11.0
6	42.0	10.2
7	47.0	10.0
8	49.0	9.7
9	60.0	9.1
10	69.0	8.9
11	73.0	8.6
12	82.0	8.4
13	86.0	8.2
14	91.0	8.2
15	103.0	7.8
16	132.0	7.5
17	137.0	7.5
18	138.0	7.0
19	147.0	7.0
20	180.0	8.1
21	196.0	8.1

22	245.0	1.4
23	251.0	7
24	344.0	6.6
25	411.0	5.0
26	429.0	4.9
27	457.0	4.0

PROBABLE ERROR IN XBT

HISTORICAL DATA		XBT DATA	
DEPTH	VEL	DEPTH	VEL
1 0.0	4966.0	1 0.0	4939.4
2 35.0	4964.1	2 65.6	4941.0
3 150.0	4916.0	3 82.0	4939.7
4 350.0	4885.0	4 98.4	4939.9
5 600.0	4886.0	5 118.1	4899.5
6 1000.0	4869.0	6 137.8	4890.1
7 1250.0	4859.0	7 154.2	4887.9
8 1500.0	4852.0	8 160.8	4884.2
		9 196.9	4877.7
		10 226.4	4875.6
		11 239.5	4872.5
		12 269.0	4870.4
		13 282.2	4867.3
		14 298.6	4867.6
		15 337.9	4863.6
		16 433.1	4861.1
		17 449.5	4861.4
		18 452.8	4863.1
		19 482.3	4863.3
		20 590.6	4871.8
		21 643.1	4872.6
		22 803.8	4866.6
		23 859.6	4862.8
		24 954.8	4858.1
		25 1000.0	4856.9
		26 1128.7	4853.4
		27 1348.5	4844.0
		28 1407.5	4843.0
		29 1499.4	4843.5

RECOMMEND NEW BT BE TAKEN

XBT DATA WILL BE ADJUSTED TO  
USE LAYER DEPTH INDICATED BY XBT AND  
HISTORICAL DATA BELOW LAYER

CORRECTED BOTTOM DEPTH IS 2067 FATHOMS  
LAYER DEPTH IS 66 FEET  
SOUND VELOCITY AT SURFACE IS 4904.0 FT/SEC



# SIMAS GENERATED SOUND VELOCITY PROFILE

NO.	DEPTH	VELOCITY
1	0.0	4964.0
2	65.0	4965.1
3	150.0	4916.0
4	350.0	4889.0
5	600.0	4886.0
6	1000.0	4869.0
7	1250.0	4859.0
8	1500.0	4852.0
9	1750.0	4848.0
10	2000.0	4846.0
11	2250.0	4846.0
12	2500.0	4847.0
13	2750.0	4849.0
14	3000.0	4851.0
15	3250.0	4853.0
16	3500.0	4855.0
17	4000.0	4860.0
18	4500.0	4864.0
19	5000.0	4871.0
20	6000.0	4883.0
21	7000.0	4899.0
22	9000.0	4930.0
23	12000.0	4979.0
24	15000.0	5031.0
25	16003.0	5049.1

# SIMAS: HISTORICAL DATA FEB2A

HISTORICAL PROFILE - THE NEAR-SURFACE AVERAGE SALINITY IS 35.50 PPT.

NU.	DEPTH	VELOCITY
1	0.0	5024.0
2	100.0	5025.0
3	200.0	5010.0
4	300.0	4952.0
5	500.0	4929.0
6	750.0	4920.0
7	1000.0	4915.0
8	1250.0	4910.0
9	1500.0	4905.0
10	1750.0	4899.0
11	2000.0	4892.0
12	2250.0	4886.0
13	2500.0	4879.0
14	2750.0	4876.0
15	3000.0	4877.0
16	3250.0	4879.0
17	3500.0	4880.0
18	4000.0	4885.0
19	4500.0	4891.0
20	5000.0	4898.0
21	6000.0	4909.0
22	7000.0	4920.0
23	9000.0	4949.0
24	12000.0	4995.0
25	15000.0	5044.0
26	17032.2	5077.9

INPUT DATA FOR HT - METRIC

NU.	DEPTH	TEMP
1	0.0	25.6
2	26.0	25.6
3	27.0	25.5
4	39.0	25.5
5	79.0	24.8
6	95.0	23.2
7	105.0	21.7
8	119.0	19.5
9	148.0	17.6
10	175.0	15.8
11	201.0	14.6
12	224.0	13.6
13	250.0	13.0
14	330.0	11.4
15	395.0	10.3
16	455.0	9.4

# PROBABLE ERROR IN XRT

## HISTORICAL DATA

DEPTH	VEL
1 0.0	5024.0
2 100.0	5025.0
3 200.0	5010.0
4 300.0	4952.0
5 500.0	4929.0
6 750.0	4920.0
7 1000.0	4915.0
8 1250.0	4910.0
9 1500.0	4905.0

## XRT DATA

DEPTH	VEL
1 0.0	5042.0
2 85.3	5043.4
3 88.6	5042.7
4 128.0	5042.9
5 259.2	5040.2
6 311.7	5028.6
7 344.5	5016.6
8 390.4	4997.8
9 485.6	4981.4
10 574.2	4964.8
11 659.5	4954.2
12 734.9	4945.2
13 820.3	4939.7
14 1000.0	4930.3
15 1082.7	4926.0
16 1296.0	4916.8
17 1492.9	4909.3

RECOMMEND NEW BT BE TAKEN

XRT DATA WILL BE ADJUSTED TO  
USE LAYER DEPTH INDICATED BY XRT AND  
HISTORICAL DATA BELOW LAYER

CORRECTED BOTTOM DEPTH IS 2839 FATHOMS  
LAYER DEPTH IS 85 FEET  
SOUND VELOCITY AT SURFACE IS 5024.0 FT/SEC

## SIMAS GENERATED SOUND VELOCITY PROFILE

NO.	DEPTH	VELOCITY
1	0.0	5024.0
2	85.3	5025.4
3	100.0	5025.0
4	200.0	5010.0
5	300.0	4952.0
6	500.0	4929.0
7	750.0	4920.0
8	1000.0	4915.0
9	1250.0	4910.0
10	1500.0	4905.0
11	1750.0	4899.0
12	2000.0	4892.0
13	2250.0	4886.0
14	2500.0	4879.0
15	2750.0	4876.0
16	3000.0	4877.0
17	3250.0	4879.0

18	3500	4777.0
19	4000.0	4485.0
20	4500.0	4491.0
21	5000.0	4848.0
22	6000.0	4909.0
23	7000.0	4920.0
24	9000.0	4949.0
25	12000.0	4995.0
26	15000.0	5044.0
27	17032.2	5077.9

# SIMAS: HISTORICAL DATA FEB2E

HISTORICAL PROFILE - THE NEAR-SURFACE AVERAGE SALINITY IS 35.50 PPT.

NO.	DEPTH	VELOCITY
1	0.0	4911.0
2	500.0	4919.0
3	750.0	4922.0
4	1000.0	4926.0
5	1250.0	4928.0
6	1500.0	4928.0
7	1750.0	4926.0
8	2000.0	4925.0
9	2250.0	4923.0
10	2500.0	4920.0
11	2750.0	4917.0
12	3000.0	4914.0
13	3250.0	4910.0
14	3500.0	4906.0
15	4000.0	4902.0
16	4500.0	4902.0
17	5000.0	4903.0
18	6000.0	4909.0
19	7000.0	4920.0
20	9000.0	4949.0
21	12000.0	4995.0
22	15151.3	5046.5

## INPUT DATA FOR BT - METRIC

NO.	DEPTH	TEMP
1	0.0	10.9
2	2.0	11.2
3	8.0	11.4
4	268.0	11.3
5	325.0	11.0
6	372.0	11.0
7	399.0	10.8
8	425.0	10.8
9	473.0	10.5
10	493.0	10.6

CORRECTED BOTTOM DEPTH IS 2525 FATHOMS  
 LAYER DEPTH IS 1221 FEET  
 SOUND VELOCITY AT SURFACE IS 4907.2 FT/SEC

# SIMAS GENERATED SOUND VELOCITY PROFILE

NO.	DEPTH	VELOCITY
1	0.0	4907.2
2	6.6	4910.3
3	26.2	4913.1
4	879.3	4925.9
5	1000.0	4926.0
6	1666.3	4926.1
7	1223.5	4928.0
8	1339.1	4926.7
9	1394.4	4928.1
10	1551.9	4928.0
11	1617.7	4929.5
12	1750.0	4926.0
13	2000.0	4925.0
14	2250.0	4923.0
15	2500.0	4920.0
16	2750.0	4917.0
17	3000.0	4914.0
18	3250.0	4910.0
19	3500.0	4906.0
20	4000.0	4902.0
21	4500.0	4902.0
22	5000.0	4903.0
23	6000.0	4909.0
24	7000.0	4920.0
25	9000.0	4949.0
26	12000.0	4995.0
27	15151.3	5046.5

# SIMAS: HISTORICAL DATA ABOVE

HISTORICAL PROFILE - THE NEAR-SURFACE AVERAGE SALINITY IS 35.50 PPT.

NO.	DEPTH	VELOCITY
1	0.0	4972.0
2	100.0	4974.0
3	250.0	4940.0
4	500.0	4928.0
5	1000.0	4927.0
6	1250.0	4928.0
7	1500.0	4928.0
8	1750.0	4928.0
9	2000.0	4925.0
10	2250.0	4923.0
11	2500.0	4920.0
12	2750.0	4917.0
13	3000.0	4914.0
14	3250.0	4910.0
15	3500.0	4906.0
16	4000.0	4902.0
17	4500.0	4902.0
18	5000.0	4903.0
19	6000.0	4909.0
20	7000.0	4920.0
21	9000.0	4949.0
22	12000.0	4995.0
23	15155.4	5046.5

## INPUT DATA FOR BT - METRIC

NO.	DEPTH	TEMP
1	0.0	19.0
2	22.0	19.0
3	27.0	18.8
4	29.0	17.1
5	32.0	16.9
6	33.0	16.4
7	37.0	15.3
8	38.0	14.9
9	40.0	14.7
10	50.0	14.4
11	53.0	14.1
12	66.0	13.7
13	122.0	13.0
14	165.0	12.0
15	192.0	12.6
16	207.0	12.5
17	214.0	12.2
18	243.0	12.0
19	285.0	12.0
20	294.0	11.9
21	335.0	11.9
22	414.0	11.2

CORRECTED BOTTOM DEPTH IS 2526 FATHOMS  
 LAYER DEPTH IS 72 FEET  
 SOUND VELOCITY AT SURFACE IS 4983.6 M/SEC

SIMAS GENERATED SOUND VELOCITY PROFILE

NO.	DEPTH	VELOCITY
1	0.0	4983.6
2	72.2	4984.8
3	88.6	4983.2
4	95.1	4967.1
5	105.0	4965.3
6	148.3	4960.4
7	121.4	4949.4
8	124.7	4945.3
9	131.2	4943.3
10	164.1	4940.7
11	173.9	4937.6
12	216.5	4934.0
13	400.3	4929.4
14	541.4	4927.3
15	630.0	4928.8
16	679.2	4928.5
17	702.1	4925.5
18	797.3	4924.8
19	935.1	4927.1
20	964.6	4926.4
21	1000.0	4927.0
22	1099.1	4928.6
23	1358.3	4924.9
24	1500.0	4928.0
25	1750.0	4926.0
26	2000.0	4925.0
27	2250.0	4923.0
28	2500.0	4920.0
29	2750.0	4917.0
30	3000.0	4914.0
31	3250.0	4910.0
32	3500.0	4906.0
33	4000.0	4902.0
34	4500.0	4902.0
35	5000.0	4903.0
36	6000.0	4909.0
37	7000.0	4920.0
38	9000.0	4949.0
39	12000.0	4995.0
40	15155.4	5046.5



HISTORICAL PROFILE - THE NEAR-SURFACE AVERAGE SALINITY IS 35.00 PPT.

NO.	DEPTH	VELOCITY
1	0.0	4855.0
2	150.0	4861.0
3	300.0	4880.0
4	550.0	4914.0
5	700.0	4910.0
6	1000.0	4884.0
7	1250.0	4868.0
8	1500.0	4862.0
9	1750.0	4858.0
10	2000.0	4856.0
11	2250.0	4858.0
12	2500.0	4860.0
13	2750.0	4862.0
14	3000.0	4864.0
15	3250.0	4867.0
16	3500.0	4870.0
17	4000.0	4876.0
18	4500.0	4884.0
19	5000.0	4891.0
20	6000.0	4906.0
21	7000.0	4920.0
22	9000.0	4949.0
23	10105.9	4966.0

INPUT DATA FOR BT - METRIC

NO.	DEPTH	TEMP
1	0.0	12.9
2	16.0	13.1
3	30.0	13.1
4	35.0	13.1
5	39.0	13.4
6	48.0	13.7
7	70.0	14.0
8	85.0	14.0
9	92.0	14.1
10	104.0	14.1
11	122.0	14.6
12	128.0	15.1
13	144.0	13.9
14	147.0	13.4
15	151.0	13.5
16	171.0	13.3
17	178.0	13.5
18	186.0	13.4
19	198.0	13.4
20	221.0	12.5

21	246.0	12.0
22	263.0	11.5
23	290.0	11.1
24	302.0	10.4
25	345.0	9.2
26	393.0	6.6
27	404.0	8.2
28	424.0	7.9
29	460.0	7.4
30	505.0	6.9

PROBABLE ERROR IN XBT

HISTORICAL DATA		XBT DATA	
DEPTH	VEL	DEPTH	VEL
1	0.0	1	0.0
2	4855.0	2	4922.5
3	4861.0	3	4925.9
4	4860.0	4	4926.6
5	4914.0	5	4927.5
6	4910.0	6	4930.6
7	4884.0	7	4934.1
8	4868.0	8	4938.3
	4862.0	9	4939.1
		10	4941.1
		11	4941.7
		12	4947.6
		13	4952.9
		14	4952.9
		15	4941.8
		16	4936.0
		17	4937.7
		18	4936.5
		19	4939.6
		20	4938.5
		21	4939.1
		22	4930.4
		23	4925.6
		24	4921.7
		25	4918.7
		26	4910.5
		27	4909.7
		28	4898.6
		29	4893.9
		30	4889.7
		31	4886.6
			4882.0
			4879.0

RECOMMEND NEW BT BE TAKEN

XBT DATA WILL BE ADJUSTED TO  
USE LAYER DEPTH INDICATED BY XBT AND  
HISTORICAL DATA BELOW LAYER

CORRECTED BOTTOM DEPTH IS 1684 FATHOMS  
 LAYER DEPTH IS 52 FEET  
 SOUND VELOCITY AT SURFACE IS 4861.0 F/SEC

SIMAS GENERATED SOUND VELOCITY PROFILE

NO.	DEPTH	VELOCITY
1	0.0	4861.0
2	52.5	4864.4
3	150.0	4861.0
4	300.0	4880.0
5	550.0	4914.0
6	700.0	4910.0
7	1000.0	4884.0
8	1250.0	4868.0
9	1500.0	4862.0
10	1750.0	4858.0
11	2000.0	4856.0
12	2250.0	4858.0
13	2500.0	4860.0
14	2750.0	4862.0
15	3000.0	4864.0
16	3250.0	4867.0
17	3500.0	4870.0
18	4000.0	4876.0
19	4500.0	4884.0
20	5000.0	4891.0
21	6000.0	4906.0
22	7000.0	4920.0
23	9000.0	4949.0
24	10105.9	4966.0

# SIMAS: HISTORICAL DATA AUG3A

HISTORICAL PROFILE - THE NEAR-SURFACE AVERAGE SALINITY IS 34.00 PPT.

NU.	DEPTH	VELOCITY
1	0.0	5050.5
2	30.0	5057.0
3	50.0	5034.0
4	100.0	5010.0
5	200.0	4990.0
6	350.0	4977.5
7	600.0	4975.8
8	1500.0	4977.0
9	3000.0	4997.0
10	4200.0	5016.0
11	7200.0	5066.0
12	9614.5	5107.0

## INPUT DATA FOR BT - METRIC

NU.	DEPTH	TEMP
1	0.0	26.2
2	18.0	26.1
3	22.0	22.0
4	29.0	19.2
5	35.0	17.7
6	41.0	16.6
7	46.0	15.9
8	49.0	15.8
9	51.0	15.5
10	59.0	15.0
11	68.0	14.8
12	77.0	14.7
13	84.0	14.8
14	135.0	14.9
15	170.0	14.7
16	215.0	14.7
17	253.0	14.4
18	275.0	14.4
19	286.0	14.2
20	370.0	14.0
21	434.0	14.0
22	443.0	13.9

PROBABLE ERROR IN XBT

## HISTORICAL DATA

DEPTH	VEL	DEPTH	VEL
-------	-----	-------	-----

1	0.0	5056.5	1	0.0	5056.5
2	30.0	5057.0	2	59.1	5056.1
3	50.0	5056.0	3	72.2	5023.8
4	100.0	5010.0	4	95.1	4999.9
5	200.0	4990.0	5	114.8	4986.1
6	350.0	4977.5	6	134.5	4976.2
7	600.0	4975.8	7	150.9	4969.4
8	1000.0	4976.3	8	160.8	4968.5
9	1500.0	4977.0	9	167.3	4965.6
			10	193.6	4960.8
			11	223.1	4958.7
			12	252.6	4958.6
			13	275.6	4960.3
			14	442.9	4963.3
			15	557.8	4963.2
			16	705.4	4965.6
			17	830.1	4964.9
			18	902.3	4966.1
			19	938.4	4965.1
			20	1000.0	4965.7
			21	1214.0	4967.6
			22	1424.0	4971.0
			23	1453.5	4970.4

RECOMMEND NEW BT BE TAKEN

XBT DATA WILL BE ADJUSTED TO  
USE LAYER DEPTH INDICATED BY XBT AND  
HISTORICAL DATA BELOW LAYER

CORRECTED BOTTOM DEPTH IS 1602 FATHOMS  
LAYER DEPTH IS 59 FEET  
SOUND VELOCITY AT SURFACE IS 5056.5 FT/SEC

SIMAS GENERATED SOUND VELOCITY PROFILE

NO.	DEPTH	VELOCITY
1	0.0	5056.5
2	59.1	5057.5
3	100.0	5010.0
4	200.0	4990.0
5	350.0	4977.5
6	600.0	4975.8
7	1000.0	4976.3
8	1500.0	4977.0
9	3000.0	4997.0
10	4200.0	5016.0
11	7200.0	5066.0
12	9614.5	5107.0

APPENDIX

Section C4

*ICAPS Environmental Profiles and Detailed BT Data*

# SIMAN PAC STATION IC - FEB

HISTORICAL PROFILE - THE NEAR-SURFACE AVERAGE SALINITY IS 34.43 PPT.

NO.	DEPTH	VELOCITY
1	0.0	4942.9
2	32.8	4943.5
3	65.6	4943.8
4	98.4	4944.0
5	164.1	4944.7
6	246.1	4944.3
7	328.1	4942.4
8	410.1	4939.3
9	492.2	4936.2
10	656.2	4929.3
11	820.3	4922.8
12	984.3	4915.7
13	1312.4	4900.3
14	1640.5	4881.0
15	1968.6	4865.1
16	2624.8	4854.7
17	3281.0	4856.2
18	3937.2	4862.4
19	4921.5	4873.0
20	6562.0	4891.8
21	8202.5	4915.8
22	9843.0	4942.9
23	13124.0	4999.6
24	16405.0	5058.8
25	17979.9	5087.6

## INPUT DATA FOR BT - METRIC

NO.	DEPTH	TEMP
1	0.0	17.1
2	14.0	17.2
3	98.0	17.2
4	143.0	17.1
5	150.0	17.0
6	156.0	16.2
7	158.0	16.0
8	211.0	14.9
9	253.0	14.2
10	275.0	13.8
11	288.0	13.4
12	345.0	12.4
13	353.0	12.3
14	367.0	11.9
15	401.0	11.4
16	411.0	11.1
17	417.0	11.1
18	426.0	10.8
19	437.0	10.6
20	442.0	10.4
21	449.0	10.4
22	476.0	9.9

# PROBABLE ERROR IN XBT

HISTORICAL DATA		XBT DATA	
DEPTH	VEL	DEPTH	VEL
1	0.0	1	0.0
2	32.8	2	45.9
3	65.6	3	321.5
4	98.4	4	469.2
5	164.1	5	492.2
6	246.1	6	511.8
7	328.1	7	518.4
8	410.1	8	692.3
9	492.2	9	830.1
10	556.2	10	902.3
11	820.3	11	944.9
12	984.3	12	1000.0
13	1000.0	13	1131.9
14	1312.4	14	1158.2
15	1500.0	15	1204.1
		16	1315.7
		17	1348.5
		18	1368.2
		19	1397.7
		20	1433.8
		21	1450.2
		22	1473.2
		23	1561.8
			4964.8
			4966.5
			4970.8
			4972.5
			4971.6
			4963.6
			4962.3
			4953.0
			4948.5
			4945.2
			4941.6
			4939.1
			4933.1
			4932.7
			4929.5
			4925.3
			4922.4
			4919.1
			4917.7
			4915.7
			4916.1
			4911.4

RECOMMEND NEW BT BE TAKEN

XBT DATA WILL BE ADJUSTED TO  
USE LAYER DEPTH INDICATED BY XBT AND  
HISTORICAL DATA BELOW LAYER

CORRECTED BOTTOM DEPTH IS 2997 FATHOMS  
LAYER DEPTH IS 469 FEET  
SOUND VELOCITY AT SURFACE IS 4942.9 FT/SEC

## SIMAS GENERATED SOUND VELOCITY PROFILE

NO.	DEPTH	VELOCITY
1	0.0	4942.9
2	469.2	4950.6
3	492.2	4936.2
4	656.2	4929.3
5	820.3	4922.8
6	984.3	4915.7
7	1000.0	4915.0



8	1312.7	4900.3
9	1500.0	4889.3
10	1640.5	4881.0
11	1968.6	4865.1
12	2624.8	4854.7
13	3281.0	4856.2
14	3937.2	4862.4
15	4921.5	4873.0
16	6562.0	4891.8
17	8202.5	4915.8
18	9843.0	4942.9
19	13124.0	4995.6
20	16465.0	5058.8
21	17979.9	5087.6

HISTORICAL PROFILE - THE NEAR-SURFACE AVERAGE SALINITY IS 33.66 PPT.

NO.	DEPTH	VELOCITY
1	0.0	4880.9
2	32.8	4881.3
3	65.6	4881.6
4	98.4	4882.1
5	164.1	4883.4
6	246.1	4884.0
7	328.1	4884.4
8	410.1	4883.6
9	492.2	4883.1
10	656.2	4881.6
11	820.3	4876.9
12	984.3	4870.4
13	1312.4	4855.0
14	1640.5	4846.2
15	1968.6	4843.9
16	2624.8	4847.8
17	3281.0	4852.7
18	3937.2	4859.1
19	4921.5	4870.1
20	6562.0	4892.0
21	8202.5	4916.8
22	9843.0	4943.0
23	13124.0	4999.4
24	15584.8	5042.4

INPUT DATA FOR HT - METRIC

NO.	DEPTH	TEMP
1	0.0	12.3
2	93.0	12.4
3	109.0	12.3
4	117.0	12.1
5	126.0	11.2
6	131.0	11.0
7	134.0	10.8
8	155.0	10.4
9	169.0	10.3
10	177.0	10.1
11	194.0	9.9
12	202.0	9.7
13	220.0	9.5
14	234.0	9.1
15	304.0	8.3
16	387.0	7.0
17	425.0	6.2
18	437.0	6.1
19	445.0	6.1
20	456.0	5.8
21	497.0	5.4

# PROBABLE ERROR IN XBT

HISTORICAL DATA			XBT DATA		
NO.	DEPTH	VEL	DEPTH	VEL	
1	0.0	4880.9	1	0.0	4910.7
2	32.8	4881.3	2	305.1	4916.5
3	65.6	4881.6	3	357.6	4916.8
4	98.4	4882.1	4	383.9	4914.4
5	160.1	4883.4	5	413.4	4904.3
6	246.1	4884.0	6	429.8	4902.9
7	328.1	4884.4	7	439.7	4900.3
8	410.1	4883.6	8	508.6	4896.5
9	492.2	4883.1	9	554.5	4896.8
10	656.2	4881.6	10	580.7	4894.2
11	820.3	4876.9	11	636.5	4893.0
12	984.3	4870.3	12	662.8	4890.7
13	1000.0	4869.6	13	721.8	4889.3
14	1312.4	4855.0	14	767.8	4885.9
15	1500.0	4850.0	15	997.4	4879.2
			16	1000.0	4879.1
			17	1269.7	4867.3
			18	1394.4	4859.7
			19	1433.8	4858.3
			20	1460.0	4859.4
			21	1496.1	4855.9
			22	1630.7	4852.9

RECOMMEND NEW BT BE TAKEN

XBT DATA WILL BE ADJUSTED TO  
USE LAYER DEPTH INDICATED BY XBT AND  
HISTORICAL DATA BELOW LAYER

CORRECTED BOTTOM DEPTH IS 2597 FATHOMS  
LAYER DEPTH IS 358 FEET  
SOUND VELOCITY AT SURFACE IS 4880.9 FT/SEC

## SIMAS GENERATED SOUND VELOCITY PROFILE

NO.	DEPTH	VELOCITY
1	0.0	4880.9
2	357.6	4886.8
3	419.1	4883.6
4	492.2	4883.1
5	656.2	4881.6
6	820.3	4876.9
7	984.3	4870.3
8	1000.0	4869.6
9	1312.4	4855.0
10	1500.0	4850.0
11	1641.5	4846.2
12	1968.6	4843.9
13	2624.4	4847.8

14	3281.0	4852.7
15	3937.2	4859.1
16	4921.5	4870.1
17	6562.0	4892.0
18	8232.5	4916.8
19	9843.0	4943.0
20	13124.0	4999.4
21	15584.8	5042.4

## HISTORICAL PROFILE - THE NEAR-SURFACE AVERAGE SALINITY IS 33.59 PPT.

NO.	DEPTH	VELOCITY
1	0.0	4948.8
2	32.8	4946.8
3	65.6	4938.6
4	98.4	4924.2
5	164.1	4889.5
6	246.1	4874.9
7	328.1	4871.7
8	410.1	4871.7
9	492.2	4874.6
10	556.2	4874.9
11	820.3	4869.1
12	984.3	4861.9
13	1312.4	4849.8
14	1640.5	4844.0
15	1968.6	4843.7
16	2624.8	4846.9
17	3281.0	4851.9
18	3937.2	4858.3
19	4921.5	4869.7
20	6562.0	4891.9
21	8202.5	4916.7
22	9843.0	4943.0
23	13124.0	4999.6
24	15584.8	5042.7

## INPUT DATA FOR BT - METRIC

NO.	DEPTH	TEMP
1	0.0	14.8
2	20.0	14.9
3	25.0	14.7
4	30.0	14.7
5	36.0	11.0
6	42.0	10.2
7	47.0	10.0
8	49.0	9.7
9	60.0	9.1
10	69.0	8.9
11	73.0	8.6
12	82.0	8.4
13	86.0	8.2
14	91.0	8.2
15	103.0	7.8
16	132.0	7.5
17	137.0	7.5
18	138.0	7.6
19	147.0	7.6
20	180.0	8.1
21	196.0	8.1

23	5.0	7.0
24	262.0	7.0
25	291.0	6.0
26	344.0	6.0
27	411.0	5.0
28	429.0	4.9
29	457.0	4.8

CORRECTED BOTTOM DEPTH IS 2597 FATHOMS  
 LAYER DEPTH IS 66 FEET  
 SOUND VELOCITY AT SURFACE IS 4943.9 FT/SEC

# SIMAS GENERATED SOUND VELOCITY PROFILE

NO.	DEPTH	VELOCITY
1	0.0	4943.9
2	65.6	4945.5
3	82.0	4944.2
4	98.4	4944.5
5	118.1	4904.0
6	137.8	4894.6
7	154.2	4892.4
8	160.8	4888.6
9	196.9	4882.2
10	226.4	4880.1
11	239.5	4876.9
12	269.0	4874.8
13	282.2	4871.8
14	298.6	4872.0
15	337.9	4868.0
16	433.1	4865.5
17	449.5	4865.8
18	452.8	4867.5
19	482.3	4867.7
20	590.6	4876.2
21	643.1	4877.1
22	803.8	4871.0
23	859.6	4867.2
24	954.8	4862.5
25	1000.0	4861.3
26	1128.7	4857.8
27	1348.5	4848.4
28	1407.5	4847.5
29	1494.4	4847.9
30	1600.5	4844.0
31	1968.6	4843.7
32	2624.8	4846.9
33	3241.0	4851.9
34	3937.4	4858.3
35	4921.5	4869.7
36	6562.0	4891.9
37	8202.5	4916.7
38	9843.0	4943.0
39	13124.0	4949.6
40	15584.8	5042.7

HISTORICAL PROFILE - THE NEAR-SURFACE AVERAGE SALINITY IS 36.34 PPT.

NO.	DEPTH	VELOCITY
1	0.0	5037.5
2	32.8	5038.1
3	65.6	5038.6
4	98.4	5039.2
5	164.1	5039.9
6	246.1	5039.9
7	328.1	5034.6
8	410.1	5019.5
9	492.2	5003.9
10	574.2	4981.4
11	656.2	4965.4
12	738.2	4952.2
13	820.3	4933.2
14	902.3	4917.0
15	984.3	4902.6
16	1066.3	4886.9
17	1148.3	4886.8
18	1230.3	4892.5
19	1312.4	4899.4
20	1394.4	4915.7
21	1476.4	4937.1
22	1558.4	4960.4
23	1640.5	5013.8
24	1722.5	5070.8
25	1804.5	5117.1

INPUT DATA FOR HT - METRIC

NO.	DEPTH	TEMP
1	0.0	25.6
2	26.0	25.6
3	27.0	25.5
4	39.0	25.5
5	79.0	24.8
6	95.0	23.2
7	105.0	21.7
8	119.0	19.5
9	148.0	17.6
10	175.0	15.8
11	201.0	14.6
12	224.0	13.6
13	250.0	13.0
14	330.0	11.4
15	395.0	10.3
16	455.0	9.4

PROBABLE ERROR IN XHT

# HISTORICAL DATA

DEPTH	VEL	DEPTH	VEL
1 0.0	5037.5	1 0.0	5045.1
2 32.8	5038.1	2 85.3	5046.5
3 65.6	5038.6	3 124.0	5045.8
4 98.4	5039.2	4 124.0	5046.0
5 164.1	5039.9	5 259.2	5043.3
6 246.1	5039.9	6 311.7	5031.8
7 328.1	5034.6	7 344.5	5019.8
8 410.1	5019.5	8 390.4	5001.0
9 492.2	5003.9	9 485.6	4984.7
10 656.2	4981.4	10 514.2	4968.2
11 820.3	4965.4	11 659.5	4957.6
12 984.3	4952.2	12 734.9	4948.6
13 1000.0	4951.3	13 820.3	4943.1
14 1312.4	4933.2	14 1000.0	4933.8
15 1500.0	4923.9	15 1082.7	4929.5
		16 1246.0	4920.3
		17 1492.9	4912.8

RECOMMEND NEW BT BE TAKEN

XBT DATA WILL BE ADJUSTED TO  
USE LAYER DEPTH INDICATED BY XBT AND  
HISTORICAL DATA BELOW LAYER

CORRECTED BOTTOM DEPTH IS 3172 FATHOMS  
LAYER DEPTH IS 85 FEET  
SOUND VELOCITY AT SURFACE IS 5037.5 FT/SEC

## SIMAS GENERATED SOUND VELOCITY PROFILE

NO.	DEPTH	VELOCITY
1 0.0	5037.5	
2 85.3	5038.9	
3 328.1	5034.6	
4 410.1	5019.5	
5 492.2	5003.9	
6 656.2	4981.4	
7 820.3	4965.4	
8 984.3	4952.2	
9 1000.0	4951.3	
10 1312.4	4933.2	
11 1500.0	4923.9	
12 1640.5	4917.0	
13 1968.6	4902.6	
14 2624.8	4886.9	
15 3281.0	4886.8	
16 3937.2	4892.5	
17 4921.5	4899.4	
18 6562.0	4915.7	
19 8202.5	4937.1	
20 9843.0	4960.4	
21 13124.0	5013.8	
22 16405.0	5070.8	



HISTORICAL PROFILE - THE NEAR-SURFACE AVERAGE SALINITY IS 35.66 PPT.

NO.	DEPTH	VELOCITY
1	0.0	4920.5
2	32.8	4920.6
3	65.6	4921.0
4	98.4	4921.4
5	164.1	4922.0
6	246.1	4923.1
7	328.1	4924.1
8	410.1	4924.9
9	492.2	4925.5
10	556.2	4926.7
11	820.3	4927.3
12	984.3	4927.7
13	1312.4	4929.2
14	1640.5	4930.9
15	1968.6	4931.5
16	2624.8	4931.7
17	3281.0	4932.8
18	3937.2	4927.6
19	4921.5	4912.1
20	6562.0	4918.5
21	8202.5	4939.1
22	9843.0	4961.5
23	13124.0	5015.3
24	15158.2	5049.3

INPUT DATA FOR BT - METRIC

NO.	DEPTH	TEMP
1	0.0	10.9
2	2.0	11.2
3	8.0	11.4
4	268.0	11.3
5	325.0	11.0
6	372.0	11.0
7	399.0	10.8
8	425.0	10.8
9	473.0	10.5
10	493.0	10.6

CORRECTED BOTTOM DEPTH IS 2526 FATHOMS  
 LAYER DEPTH IS 1221 FEET  
 SOUND VELOCITY AT SURFACE IS 4904.0 FT/SEC

SIMAS GENERATED SOUND VELOCITY PROFILE

NO.	DEPTH	VELOCITY
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1	U.	49
2	6.6	4912.1
3	26.2	4914.8
4	879.3	4927.6
5	1000.0	4927.7
6	1066.3	4927.8
7	1220.5	4929.8
8	1309.1	4928.4
9	1394.4	4929.9
10	1551.9	4929.8
11	1617.5	4931.2
12	1640.5	4930.9
13	1968.6	4931.5
14	2624.8	4931.7
15	3281.0	4932.8
16	3937.2	4927.6
17	4921.5	4912.1
18	6562.0	4918.5
19	8202.5	4939.1
20	9843.0	4961.5
21	13124.0	5015.3
22	15158.2	5049.3

HISTORICAL PROFILE - THE NEAR-SURFACE AVERAGE SALINITY IS 35.61 PPT.

NO.	DEPTH	VELOCITY
1	0.0	4973.2
2	32.8	4970.5
3	65.6	4967.6
4	98.4	4960.9
5	164.1	4944.1
6	246.1	4931.6
7	328.1	4926.2
8	410.1	4924.6
9	492.2	4923.6
10	656.2	4923.3
11	820.3	4924.1
12	984.3	4924.9
13	1312.4	4926.6
14	1640.5	4928.2
15	1968.6	4929.0
16	2624.8	4931.4
17	3281.0	4931.2
18	3937.2	4926.1
19	4921.5	4909.5
20	6562.0	4917.2
21	8202.5	4939.0
22	9843.0	4962.5
23	13124.0	5015.7
24	15158.2	5049.1

INPUT DATA FOR BT - METRIC

NO.	DEPTH	TEMP
1	0.0	19.0
2	22.0	19.0
3	27.0	18.8
4	29.0	17.1
5	32.0	16.9
6	33.0	16.4
7	37.0	15.3
8	38.0	14.9
9	40.0	14.7
10	50.0	14.4
11	53.0	14.1
12	66.0	13.7
13	122.0	13.0
14	165.0	12.6
15	192.0	12.6
16	207.0	12.5
17	214.0	12.2
18	243.0	12.0
19	285.0	12.0
20	294.0	11.9
21	335.0	11.9
22	414.0	11.2

CORRECTED BOTTOM DEPTH IS 7526 FATHOMS  
 LAYER DEPTH IS 72 FEET  
 SOUND VELOCITY AT SURFACE IS 4981.6 FT/SEC

SIMAS GENERATED SOUND VELOCITY PROFILE

NO.	DEPTH	VELOCITY
1	0.0	4981.6
2	72.2	4982.8
3	88.6	4981.2
4	95.1	4965.0
5	105.0	4963.2
6	108.3	4958.3
7	121.4	4947.4
8	124.7	4943.3
9	131.2	4941.3
10	164.1	4938.6
11	173.4	4935.6
12	216.5	4932.0
13	400.3	4927.4
14	541.4	4925.3
15	630.0	4926.8
16	674.2	4926.5
17	762.1	4923.5
18	797.3	4922.8
19	935.1	4925.1
20	964.6	4924.4
21	1000.0	4925.0
22	1099.1	4926.6
23	1358.3	4922.9
24	1645.5	4928.2
25	1968.6	4929.0
26	2624.8	4931.4
27	3281.0	4931.2
28	3937.2	4926.1
29	4521.5	4909.5
30	6552.0	4917.2
31	8202.5	4939.0
32	9843.0	4962.5
33	13124.0	5015.7
34	15158.2	5049.1

'SIM ATL NHC 11 - FEB 1961

# HISTORICAL PROFILE - THE NEAR-SURFACE AVERAGE SALINITY IS 33.72 PPT.

NO.	DEPTH	VELOCITY
1	0.0	4791.6
2	32.8	4793.2
3	65.6	4795.2
4	98.4	4798.4
5	164.1	4807.1
6	246.1	4822.6
7	328.1	4839.7
8	410.1	4852.5
9	492.2	4859.7
10	556.2	4865.4
11	820.3	4863.5
12	984.3	4860.4
13	1312.4	4851.1
14	1640.5	4850.2
15	1968.6	4852.8
16	2624.8	4859.5
17	3281.0	4867.3
18	3937.2	4876.0
19	4921.5	4890.1
20	6562.0	4913.9
21	8202.5	4937.5
22	9843.0	4958.8

## INPUT DATA FOR RT - METRIC

NO.	DEPTH	TEMP
1	0.0	12.9
2	16.0	13.1
3	30.0	13.1
4	35.0	13.1
5	39.0	13.4
6	48.0	13.7
7	70.0	14.0
8	85.0	14.0
9	92.0	14.1
10	104.0	14.1
11	122.0	14.6
12	128.0	15.1
13	144.0	13.9
14	147.0	13.4
15	151.0	13.5
16	171.0	13.3
17	178.0	13.5
18	186.0	13.4
19	198.0	13.4
20	221.0	12.5
21	246.0	12.0
22	283.0	11.5
23	290.0	11.1

24 302.0 10.4  
 25 345.0 9.2  
 26 393.0 8.6  
 27 404.0 8.2  
 28 424.0 7.9  
 29 460.0 7.4  
 30 505.0 6.9

PROBABLE ERROR IN XHT

HISTORICAL DATA		XHT DATA	
DEPTH	VEL	DEPTH	VEL
1 0.0	4791.6	1 0.0	4917.2
2 32.8	4793.2	2 52.5	4920.6
3 65.6	4795.2	3 98.4	4921.4
4 98.4	4798.4	4 114.8	4922.2
5 164.1	4807.1	5 128.0	4925.4
6 286.1	4822.6	6 157.5	4928.8
7 328.1	4839.7	7 229.7	4933.1
8 410.1	4852.5	8 278.9	4933.9
9 492.2	4859.7	9 301.9	4935.9
10 656.2	4865.4	10 341.2	4936.5
11 820.3	4863.5	11 400.3	4942.4
12 984.3	4860.4	12 420.0	4947.8
13 1000.0	4860.0	13 472.5	4936.6
14 1312.4	4851.1	14 482.3	4930.8
15 1500.0	4850.0	15 495.4	4932.4
		16 561.1	4931.2
		17 584.0	4934.3
		18 610.3	4933.2
		19 649.6	4933.9
		20 725.1	4925.1
		21 807.1	4920.3
		22 862.9	4916.4
		23 951.5	4913.3
		24 990.9	4905.2
		25 1000.0	4904.4
		26 1131.9	4893.2
		27 1289.4	4888.5
		28 1325.5	4884.2
		29 1391.1	4881.2
		30 1509.3	4876.5
		31 1656.9	4873.4

RECOMMEND NEW BT BE TAKEN

XHT DATA WILL BE ADJUSTED TO  
 USE LAYER DEPTH INDICATED BY XHT AND  
 HISTORICAL DATA BELOW LAYER

CORRECTED BOTTOM DEPTH IS 1641 FATHOMS  
 LAYER DEPTH IS 52 FEET  
 SOUND VELOCITY AT SURFACE IS 4797.6 FT/SEC

SINUS GENERALIS		DEPTH	VELOCITY
NO.	DEPTH	VELOCITY	
1	0.0	4747.6	
2	52.5	4801.0	
3	65.6	4745.2	
4	98.4	4798.4	
5	164.1	4807.1	
6	246.1	4822.6	
7	328.1	4839.7	
8	410.1	4852.5	
9	492.7	4859.7	
10	556.2	4865.4	
11	820.3	4863.5	
12	984.3	4860.4	
13	1000.0	4860.0	
14	1312.4	4851.1	
15	1500.0	4850.6	
16	1640.5	4850.2	
17	1968.6	4852.8	
18	2624.8	4859.5	
19	3281.0	4867.3	
20	3937.2	4876.0	
21	4921.5	4890.1	
22	6562.0	4913.9	
23	8202.5	4937.5	
24	9843.0	4958.8	

SIMAS: MED. STATION JA - AUG

HISTORICAL PROFILE - THE NEAR-SURFACE AVERAGE SALINITY IS 34.74 PPT.

NO.	DEPTH	VELOCITY
1	0.0	5049.6
2	32.8	5045.7
3	65.6	5033.3
4	98.4	5013.4
5	164.1	4987.0
6	248.1	4974.7
7	328.1	4970.4
8	410.1	4969.5
9	492.2	4969.4
10	656.2	4970.3
11	820.3	4971.3
12	984.3	4972.4
13	1312.4	4975.1
14	1640.5	4978.5
15	1968.6	4982.2
16	2624.8	4991.2
17	3281.0	5001.2
18	3937.2	5011.7
19	4921.5	5028.1
20	6562.0	5055.7
21	8202.5	5083.4
22	9843.0	5111.6

INPUT DATA FOR HT - METRIC

NO.	DEPTH	TEMP
1	0.0	26.2
2	16.0	26.1
3	22.0	22.0
4	29.0	19.2
5	35.0	17.7
6	41.0	16.6
7	46.0	15.9
8	49.0	15.8
9	51.0	15.5
10	59.0	15.0
11	68.0	14.8
12	77.0	14.7
13	84.0	14.8
14	135.0	14.9
15	170.0	14.7
16	215.0	14.7
17	253.0	14.4
18	275.0	14.4
19	286.0	14.2
20	370.0	14.0
21	434.0	14.0
22	443.0	13.9



CORRECTED BOTTOM DEPTH IS 1641 FATHOMS  
 LAYER DEPTH IS 59 FEET  
 SOUND VELOCITY AT SURFACE IS 5062.5 F/SEC

SIMAS GENERATED SOUND VELOCITY PROFILE

NO.	DEPTH	VELOCITY
1	0.0	5062.5
2	59.1	5062.7
3	72.2	5030.5
4	95.1	5006.7
5	114.8	4992.9
6	134.5	4983.0
7	150.9	4976.2
8	160.8	4975.4
9	167.3	4972.4
10	193.6	4967.7
11	223.1	4965.6
12	252.6	4965.5
13	275.6	4967.1
14	442.9	4970.2
15	557.8	4970.0
16	705.4	4972.5
17	830.1	4971.8
18	902.3	4973.0
19	938.4	4972.0
20	1000.0	4972.5
21	1214.0	4974.4
22	1424.0	4977.9
23	1453.5	4977.3
24	1640.5	4978.5
25	1968.6	4982.2
26	2624.8	4991.2
27	3261.0	5001.2
28	3937.2	5011.7
29	4921.5	5028.1
30	6562.0	5055.7
31	8202.5	5083.4
32	9843.0	5111.6

APPENDIX D  
ICAPS and SIMAS Sound Speed  
Profile Generation Methodologies

MEMORANDUM

TO: LCDR Al Galus

FROM: J. Locklin and B. W. Scaife

DATE: 21 April 80

SUBJECT: ICAPS and SIMAS Sound Speed Profile Generation Methodologies

ENCLOSURES: (1) Features of ICAPS and SIMAS SSP GENERATORS  
(2) ICAPS Logic Flow  
(3) SIMAS Logic Flow  
(4) Problem Areas in ICAPS and SIMAS Codes  
(5) ICAPS Temperature Synthesizing Algorithm  
(6) Test Results

REFERENCE: (1) "The ICAPS Water Mass History File," by Alvan Fisher, Jr., N00 RP-19, May 1978.  
(2) "Description of ICAPS Environmental Data Structure" by John Lever, NAVOCEANO TN 3700-82-79, March 1979

1. The purpose of this task was to provide the capability to examine the parameter (temperature, salinity, depth, sound speed) and coded algorithm dependencies of the SIMAS and ICAPS profile generation processes. This effort is directed toward determining an optimal choice of parameters to be included in the APP Data Base which is to support both ICAPS and SIMAS as they are to be configured in the Comprehensive APP systems.
2. Enclosures (1), (2), and (3) document the respective algorithms and were prepared from FORTRAN source code listings. ICAPS listings were provided by Mr. Doug Gordon, NAVOCEANO, for both the Univac 1108 and NOVA 800 software versions. SIMAS listings were provided by Mr. Burley Brunson, NORDA CODE 320, for the PDP 11/40 version installed at NORDA. In the process of examining and documenting the source code, several problems were discovered in each of the systems. These problems are discussed in enclosures (4) and (5).
3. In order to study the performance of each algorithm, a version of each was coded from the source listings and installed on the CDC 6600 for test purposes. The basic algorithms to treat historical and 31 profile data, and to prepare resultant SSP's remain intact and reflect the same methods used in ICAPS and SIMAS codes currently in operation on their respective computers.
4. A preliminary set of tests were conducted to verify the CDC versions, look at the criticality of near-surface vertical salinity variation, and compare the merge processes. E. Hashimoto, NORDA code 321, provided hydrographic data at two stations. The results of these tests are contained in enclosure (6). The test cases illustrate the applicability of the ICAPS and SIMAS algorithms.

ENCLOSURE 1  
FEATURES OF ICAPS AND SIMAS SSP GENERATORS

Enclosure (1) to  
ODSI memo dtd 4/21/89  
Locklin to Galus

# METHODOLOGICAL FEATURES OF SSP GENERATOR

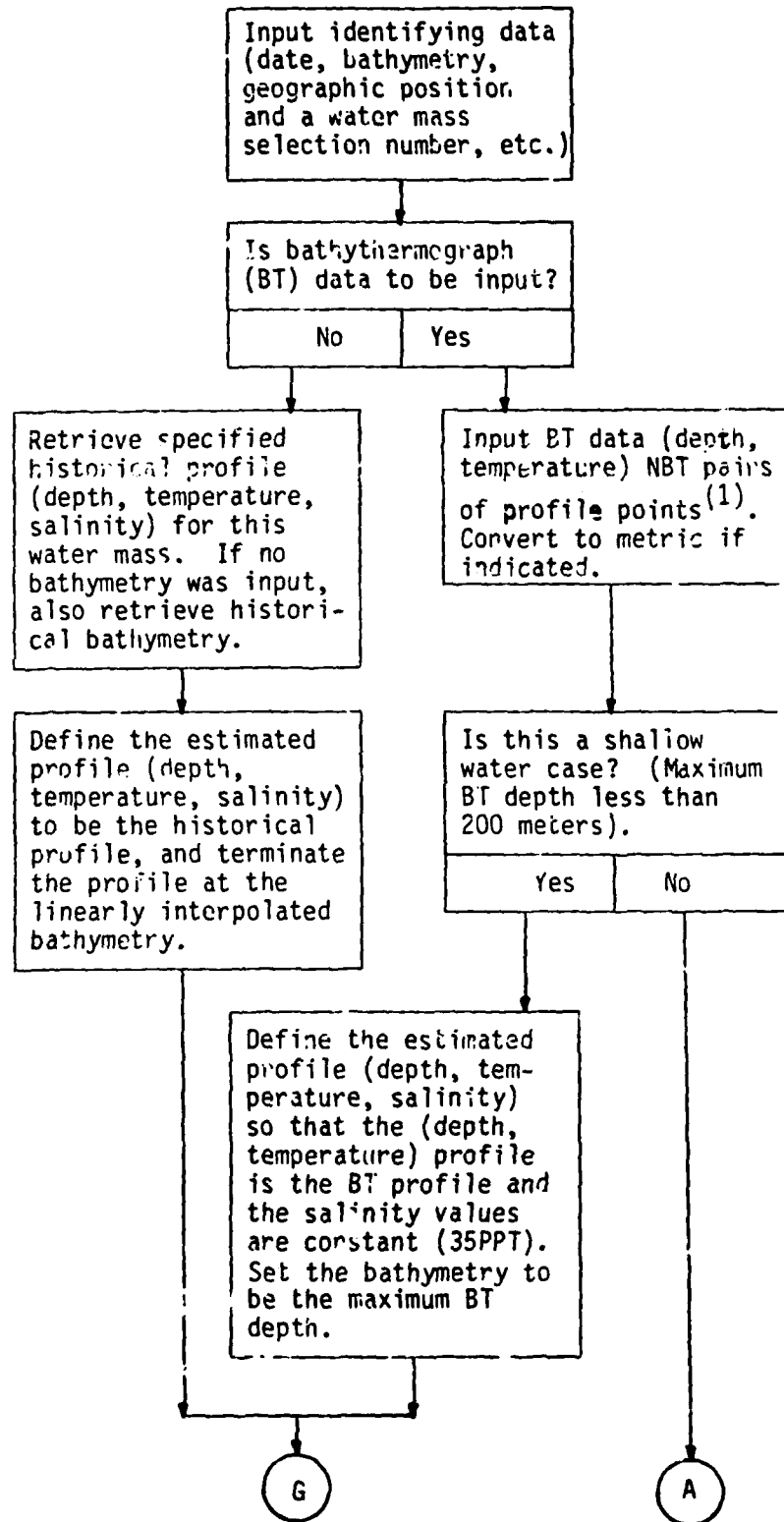
ICAPS	SIMAS
<p>Multiple water mass (up to 5) capability for each geographic area.</p> <p>Historical data base contains for each water mass, temperature and salinity profiles <math>(ZH_i, TH_i, SH_i), i=1, NH \leq 45</math>.</p> <p>Extends the Bathythermograph (BT) profile, <math>(ZB_j, TB_j), j=1, NBT,^{(1)}</math> with modified historical temperatures for corresponding water mass at depths below the last BT depth, and interpolate salinity values from historical profile.</p> <p>Insert bathymetry and truncate SSP at bottom depth.</p> <p>Correct salinity values for a stable environment.</p> <p>Utilize Wilson's equation to calculate SSP.</p> <p>Calculate the layer depth.</p>	<p>A geographic area is represented by one water mass.</p> <p>Historical data base contains for each water mass a sound speed profile <math>(ZH_i, VH_i), NH \leq 27</math>, and a representative near-surface salinity value, <math>S</math>.</p> <p>Utilize Leroy's equation to calculate the SSP for BT profile with historical constant salinity. The BT profile may consist of up to 24 points.</p> <p>Shift the BT SSP by the linearly interpolated velocity difference between historical SSP and BT SSP at 1000 ft. Next, extend below the BT SSP with unmodified historical SSP points.</p> <p>Insert bathymetry and truncate SSP at bottom depth.</p> <p>Adjust fathometer bathymetry and interpolate sound speed at adjusted bottom depth.</p> <p>Calculate the layer depth.</p>

$$(1) \quad NBT \leq \begin{cases} 16 \text{ Univac} \\ 30 \text{ Nova} \end{cases}$$

ENCLOSURE 2  
ICAPS LOGIC FLOW

Enclosure (2) to  
ODSI memo dtd 4/21/80  
Locklin to Galus

# ICAPS Sound Speed Profile (SSP) Generation (UNIVAC Version)



(1) NBT = {16 Univac}  
          {30 Nova }

A

Select historical profile (depth, temperature, salinity) for this water mass  
-- NH number of triple points and retrieve the merge weighting factor (MFACT).

Retrieve up to five historical profiles with 200m temperature tolerances and 200-300m gradient tolerances.

Linearly interpolate the 200m and 300m BT temperature values and define the 200-300m BT gradient.

Is there more than one historical profile?

Yes	No
-----	----

Select first historical profile.

Has an historical profile been specified?

No	Yes
----	-----

Select specified historical profile.

Select an historical profile using tolerances.

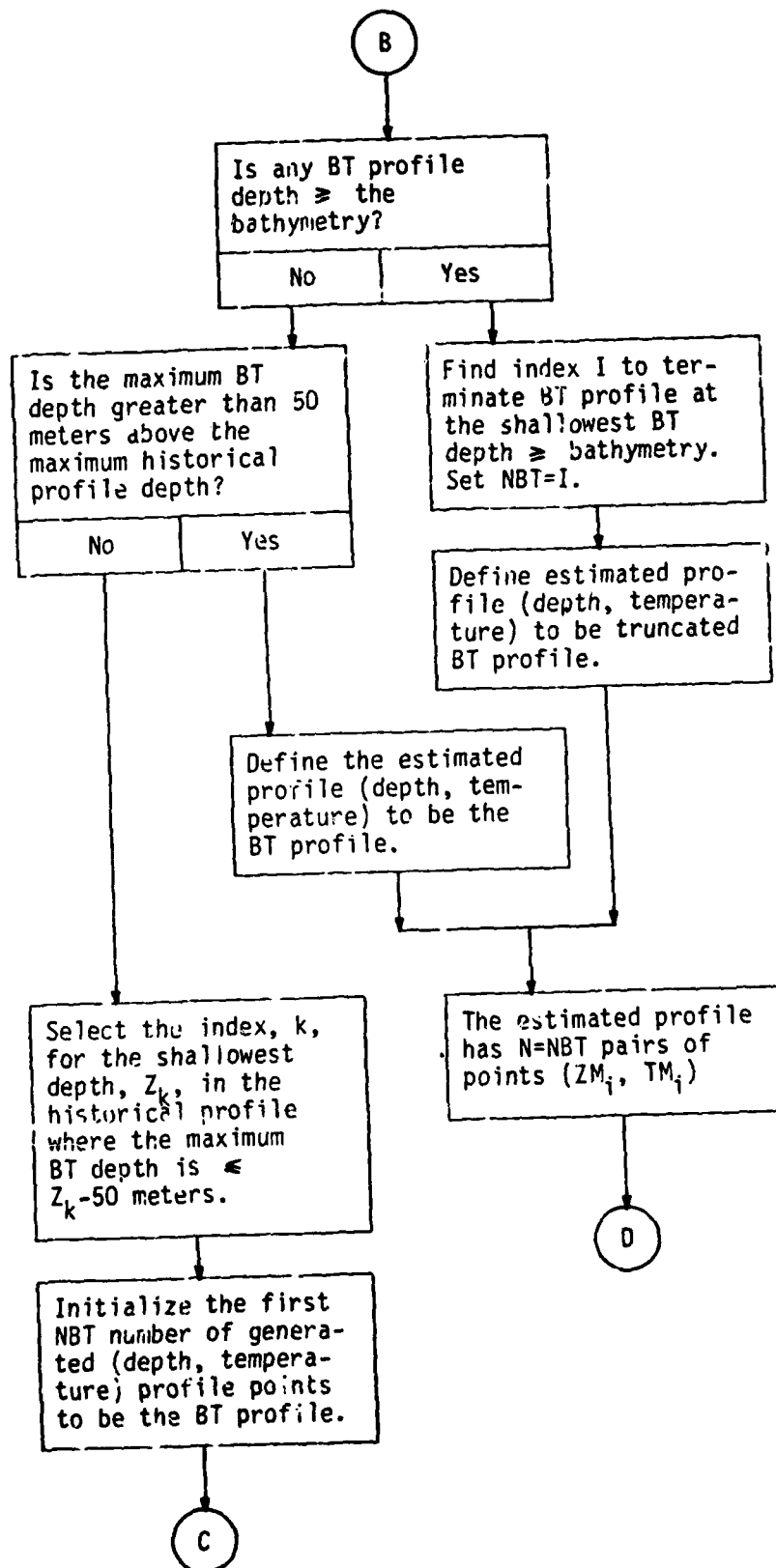
Is bathymetry needed?

Yes	No
-----	----

Retrieve historical bathymetry.

B





C

Complete the (depth, temperature) profile being generated by augmenting the initialized NBT number of points with the historical depths  $Z_i$  for  $i=k, \dots, NH$  and modify the associated historical temperatures,  $T_i$ .

Let  $(ZM_j, TM_j)$ ,  $j=1, N$  be the initialized generated profile points ( $N=NBT$ ).

Calculate  $\Delta T = TM_N - T_{k-1} + \frac{(T_k - T_{k-1})(ZM_N - Z_{k-1})}{(Z_k - Z_{k-1})}$   
 $X = MFACT/1000.$

Loop over historical profile for  $i=k, \dots, NH$

Calculate  $N = N+1$   
 $ZM_N = Z_i$   
 $\Delta T = (\Delta T)X(Z_i - Z_{i-1})/100.$   
 $TM_N = T_i + \Delta T$

Is the depth,  $ZM_N$ ,  
less than the  
bathymetry?

Yes

No

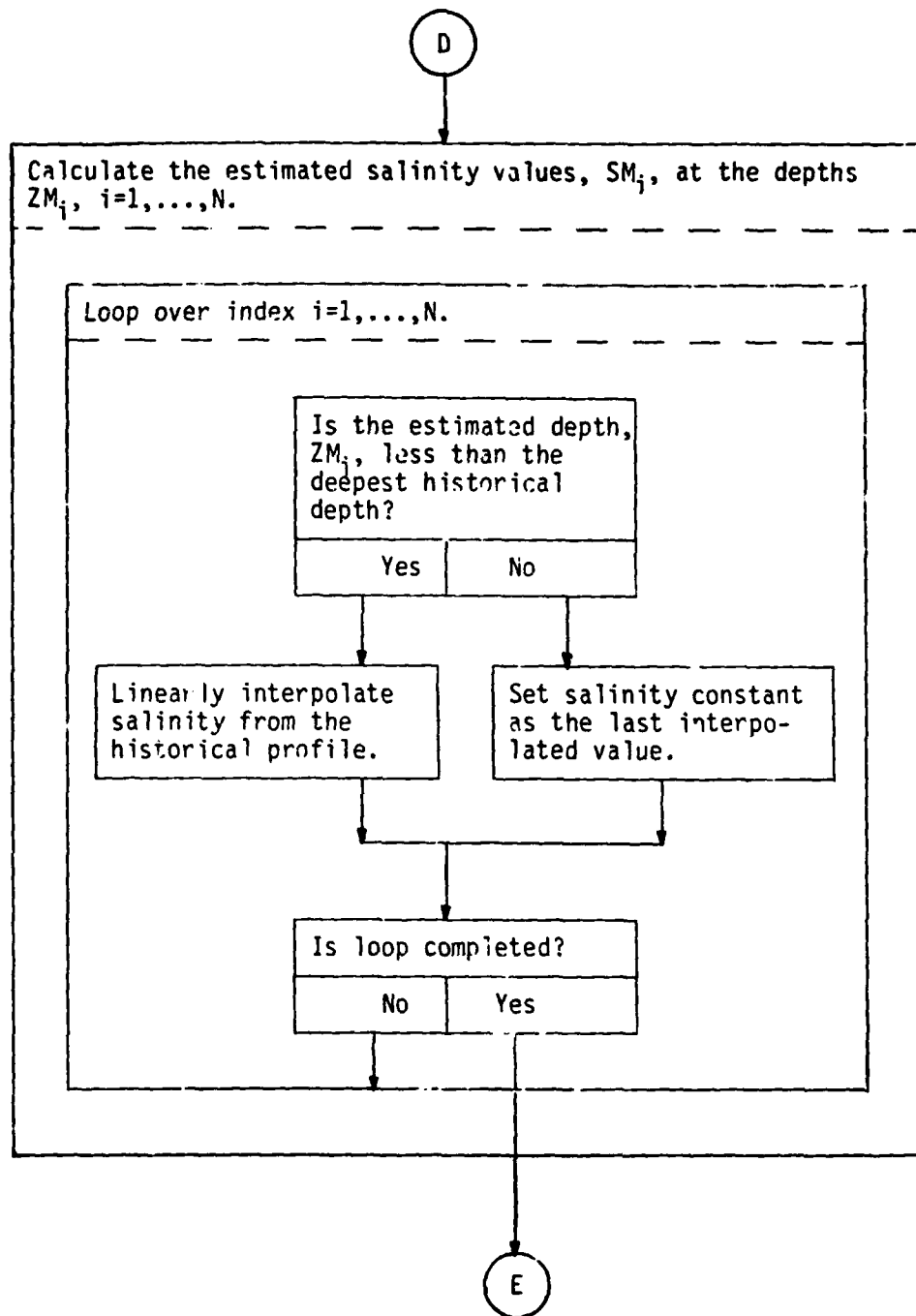
Is loop completed?

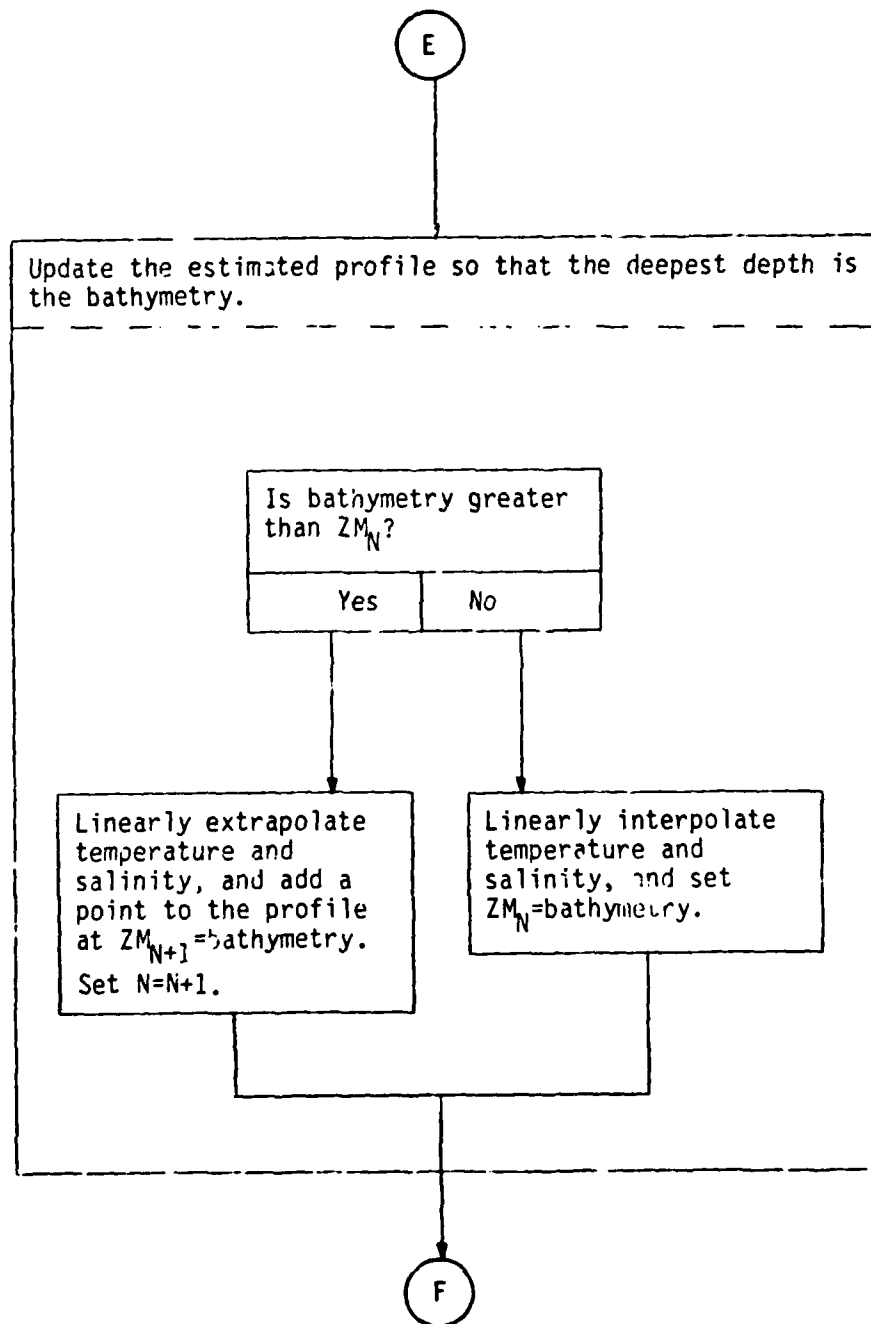
No

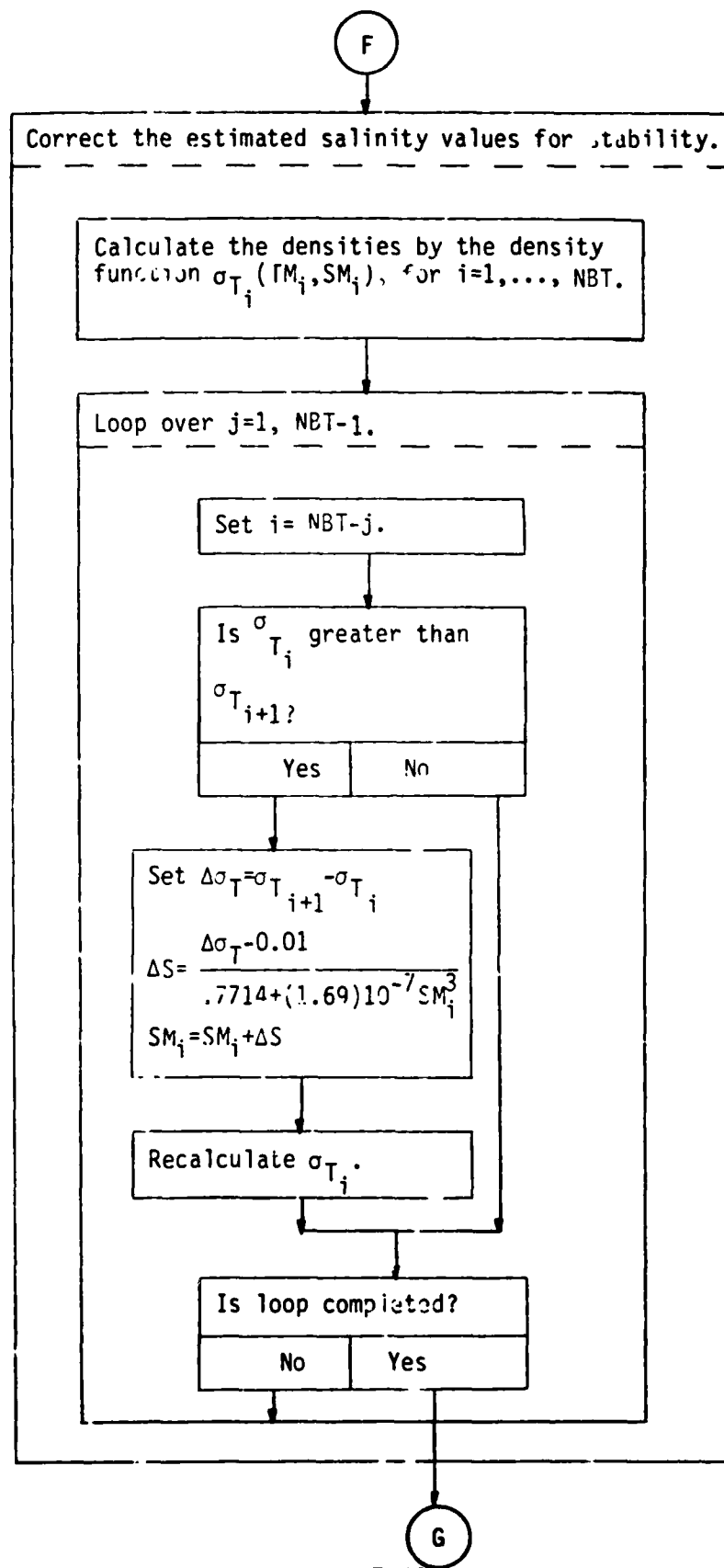
Yes

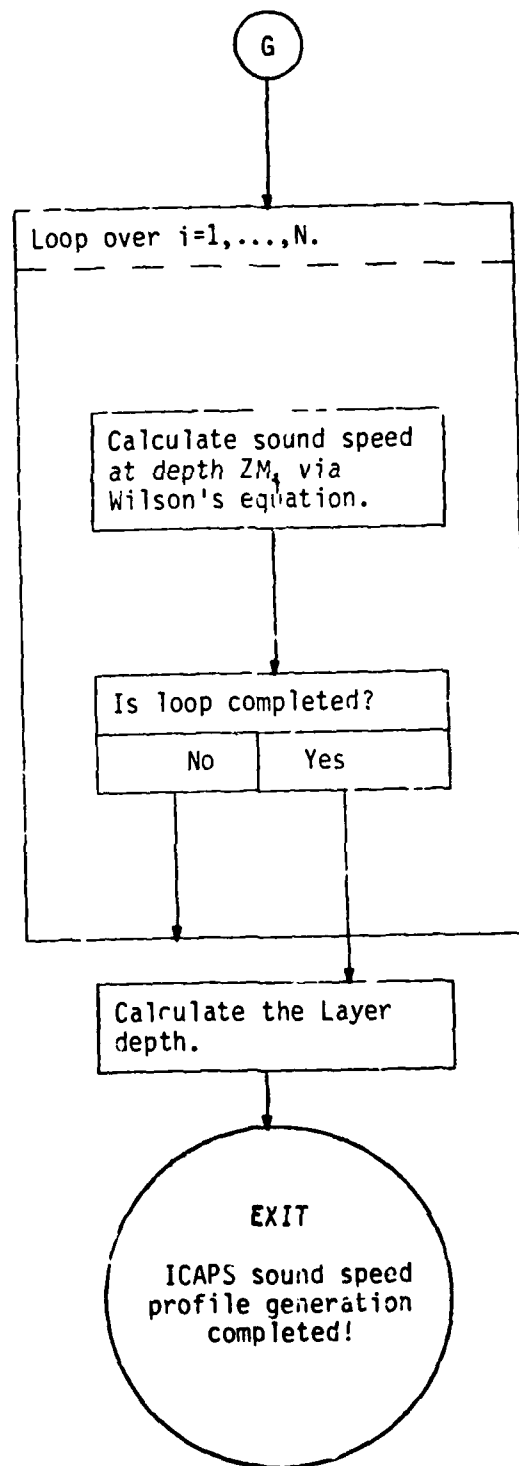
The estimated profile  
now has  $N$  pairs of  
points

D





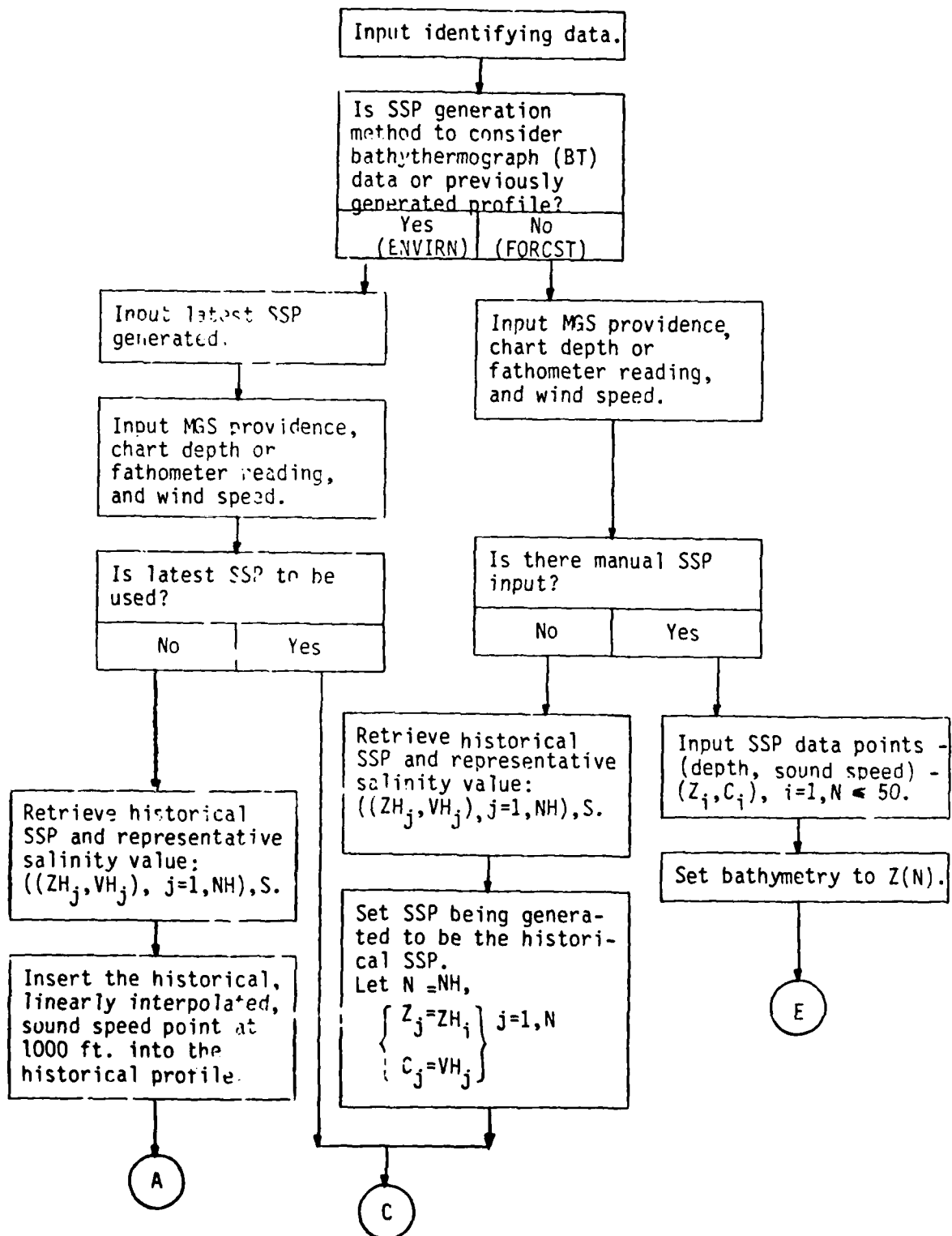




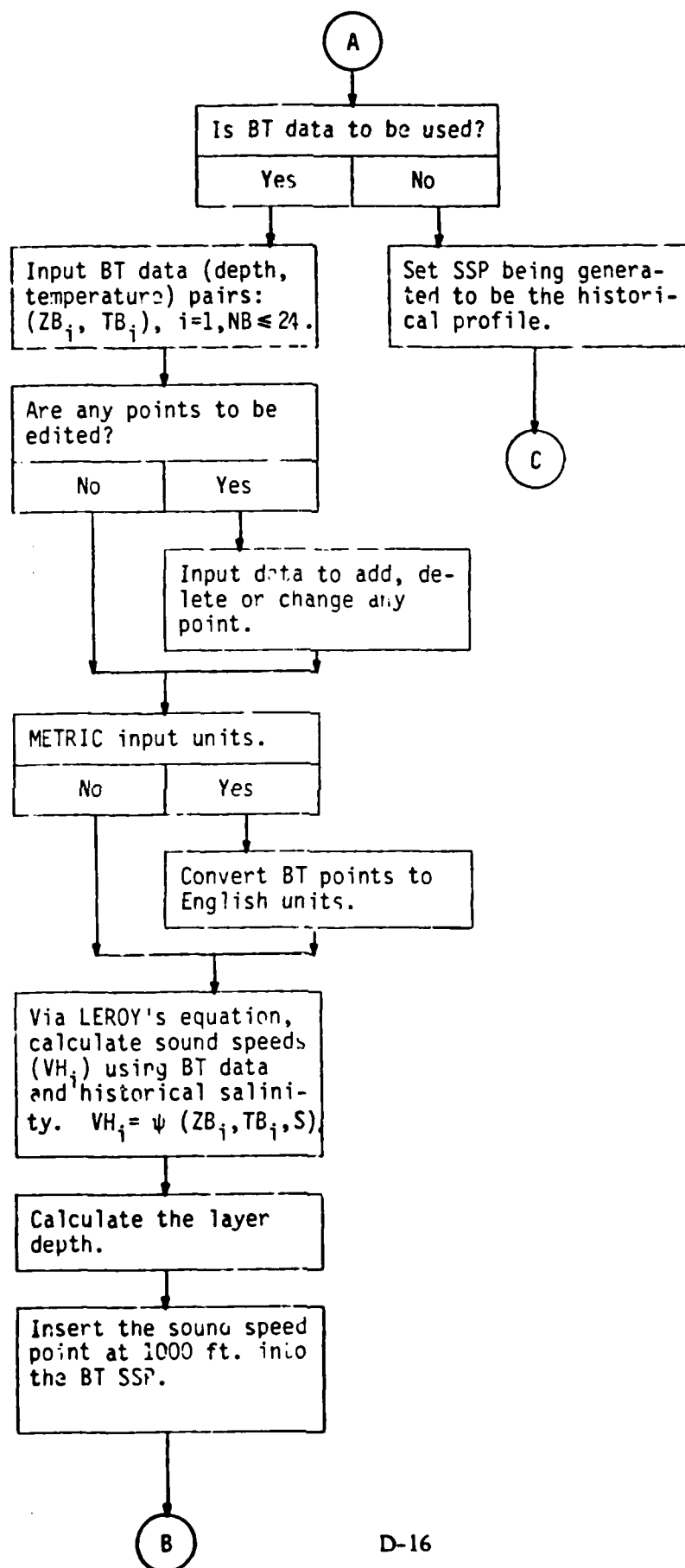
ENCLOSURE 3  
SIMAS LOGIC FLOW

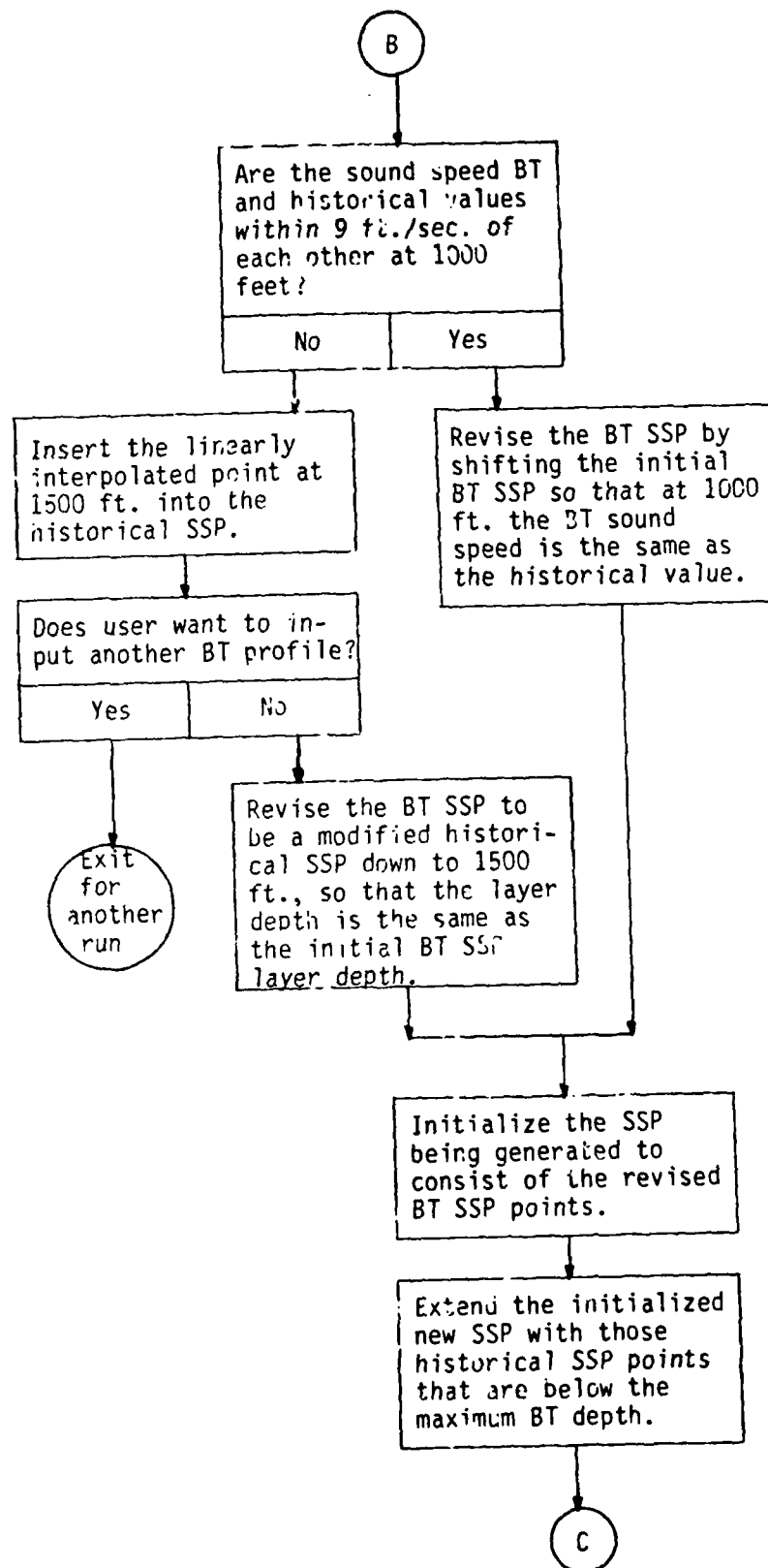
Enclosure (3) to  
ODSI memo dtd 4/21/80  
Locklin to Galus

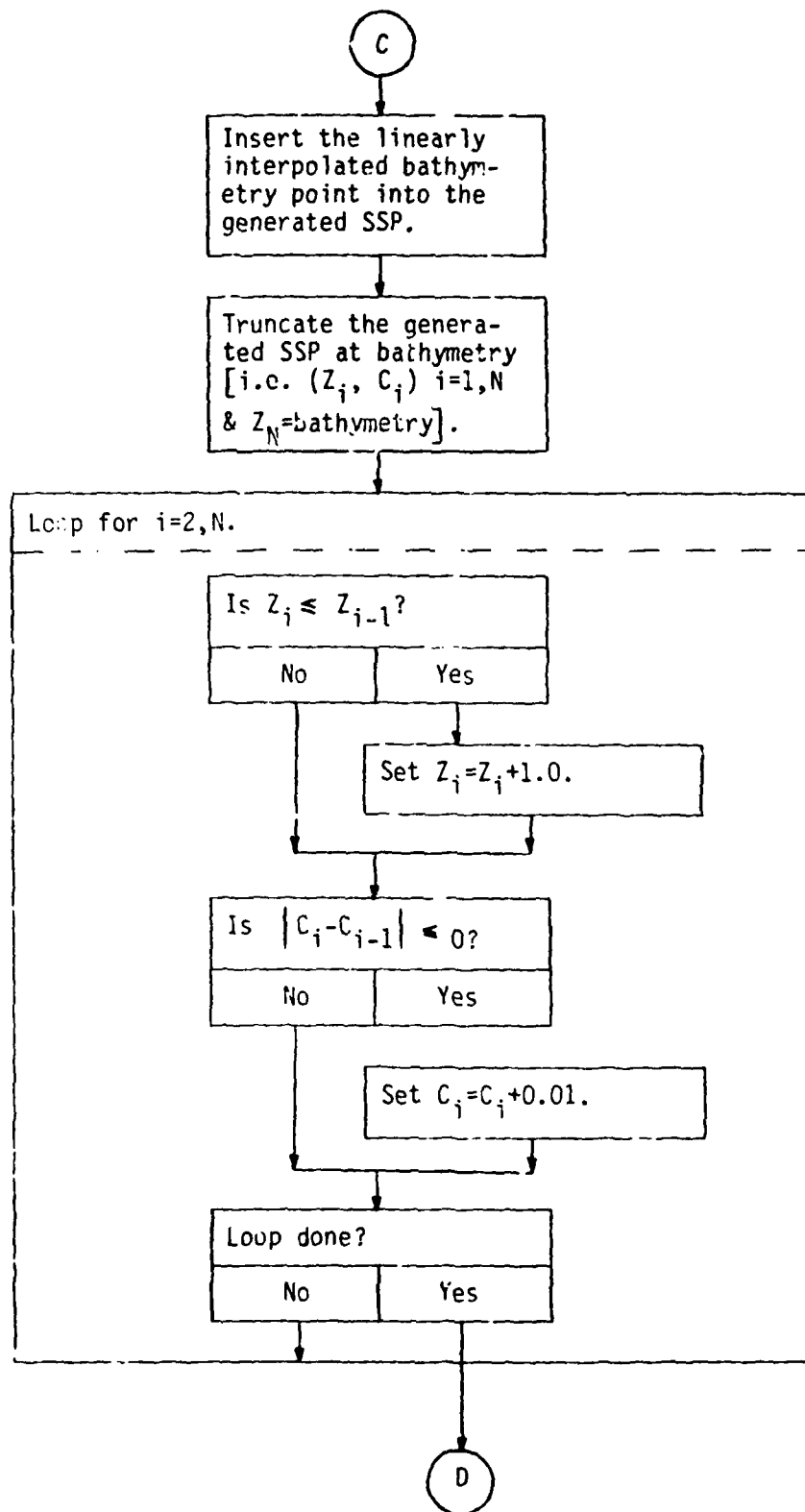
# SIMAS Sound Speed Profile (SSP) Generation

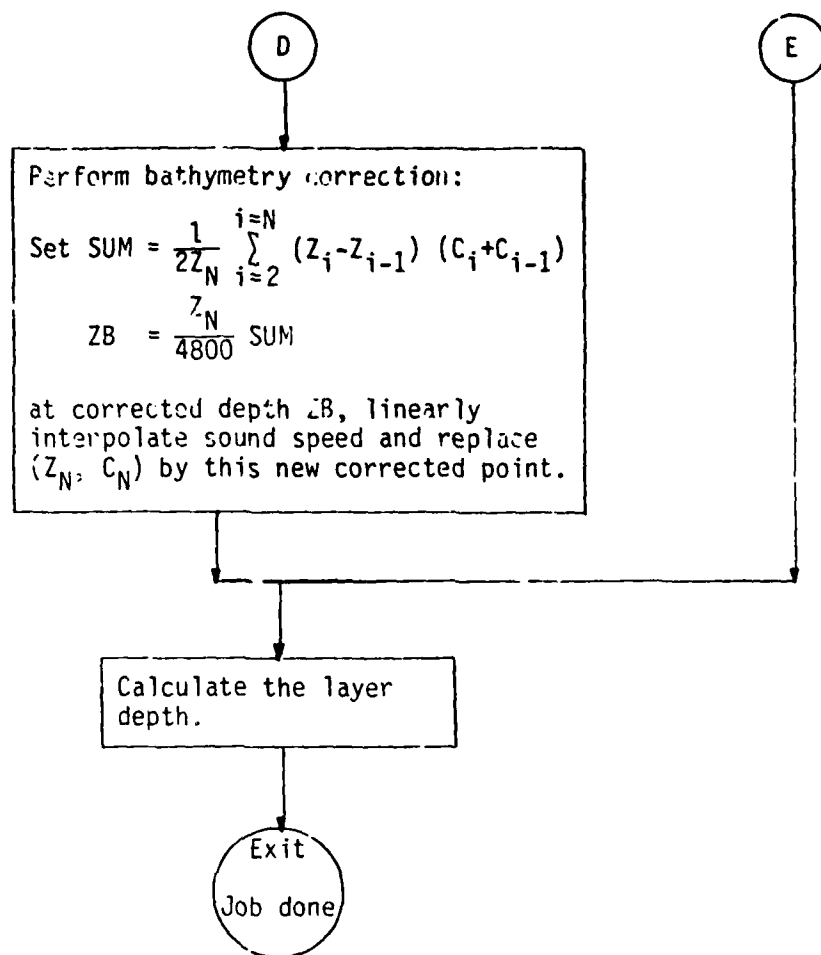












#### ENCLOSURE 4

#### PROBLEM AREAS IN ICAPS AND SIMAS CODES

During the implementation process to establish ICAPS and SIMAS on the CDC 6600 computer for comparative analysis purposes, problems were revealed. These problems are assembled for each program under three categories: 1. program errors, 2. program cautions, and 3. comments.

Enclosure (4) to  
ODSI memo dtd 4/21/80  
Locklin to Galus

1. ICAPS
- 1.1 PROGRAM ERRORS
- 1.1.1 Univac Version
- 1.1.1.1 The synthesized profile contains salinities that are initialized by interpolating values from the historical profile, and when a depth of the synthesized profile is equal to or exceeds the maximum depth of the historical profile (a most frequent occurrence) the salinity is set to be the historical salinity for the previous depth. This can be corrected by changing the inequality ".LT." to ".LE." in the IF statement following FORTRAN statement number 50 in subroutine MERGE. This code error will have negligible impact for the deeper profiles. For shallower profiles the impact will depend upon the effect on velocity by the error in salinity.
- 1.1.1.2 When the user wishes to use only the historical data (no B<sub>i</sub> data: NDP=0 and BOTZ 1.0) and metric is not specified (MOE ≠ "M"), the program incorrectly multiplies the historical bathymetry in meters by the feet-to-meters conversion factor, FTMT. This can be corrected by inserting after format statement number 9001 in the main program  
IF (MOE .NE. 1 HM) BOTZ = FTMT\*BOTZ  
  
and deleting the statement immediately after FORTRAN statement number 10, and replacing FORTRAN statement number 100 with  
100 CONTINUE.
- 1.1.1.3 An error message is not utilized when appropriate and an incorrect message is printed. Change the line just preceding format statement number 1045 to read  
WRITE (6, 1045) IBTYP2.
- 1.1.1.4 In the main program, there is an "MP" variable occurring just after format statement number 1013 that is not initialized. Apparently, this was to have been defined by "NP" in the preceding call to subroutine COMPUX. This is corrected by changing "NP" to "MP," the last argument in the argument list for the "CALL COMPUX ..." statement, two lines after FORTRAN statement number 360.
- 1.1.1.5 Subroutine MERGE calls subroutine SGMTST to perform the water column stability algorithm from the bottom of the merged profile. Though this is in contrast with the NOVA version that starts from the bottom of the BT, it is more reasonable since the algorithm is applied just below the BT where merging occurs (refer to paragraph 1.1.2.2). Subroutine SGMTST has an incorrect DIMENSION statement allocating insufficient memory, particularly for the density array. The current dimension for 30 elements is not consistent with the calling routine. The arrays should be dimensioned for 50 elements each, since the calling routine, MERGE, identifies the arrays as for the merged profile. This is corrected by changing the dimension statement in subroutine SGMTST to read  
DIMENSION T(50), S(50), SIGMA(50)

1.1.1.6 Under normal operating system usage, the density and stability calculations will be incorrect. Mixed expressions contain integers raised to negative integer powers which result in zero values.

1.1.1.6.1 Subroutine SIGMAT has an equation "B = ..." that contains the integer 10 raised to a negative integer power.

1.1.1.6.2 Subroutine SGMTST has the equation "DS = ..." that contains two integer 10's raised to negative powers.

1.1.2 Nova 800 version

1.1.2.1 Same error as described in paragraph 1.1.1.1 above.

1.1.2.2 The program should perform the water column stability algorithm from the bottom of the merged profile as the Univac version does (refer to paragraph 1.1.1.5) -- rather than from the bottom of the BT. Thus, the effects on density (refer to paragraph 1.3.4.2) due to temperature revisions by merging just below the deepest BT depth would be accounted for. This can be corrected by changing in subroutine MERGE, the FORTRAN statement just after statement number 100 to:

N=NOPTM-1

and two lines later, change to read  
K=NOPTM-J.

1.2 PROGRAM CAUTIONS

1.2.1 ICAPS, Univac and Nova versions

1.2.1.1 When a merged profile is created, the number of points defining the profile is not verified to avoid exceeding the allocated storage for a maximum of 50 points. In the event that a merged profile should have more than 50 points, the overflow would incorrectly redefine necessary program locations (e.g. the near-surface temperatures, TM(1), TM(2), ..., would be redefined by depth values ZM(51), ZM(52), ..., respectively, etc.)

1.2.1.2 When the bathymetry is below the ICAPS merged profile, the merged profile is augmented by one more point defined by the bathymetry, and temperature and salinity values extrapolated from the deepest (last) depth interval in the profile. The ICAPS program does not address the question "How reasonable are the extrapolated values?". Reasonability of these values is dependent upon how much deeper the extrapolation extends the profile with respect to the depth interval being extrapolated from, and the gradient on that same interval.

1.3 COMMENTS — ICAPS is a merge methodology that assumes the bathythermograph, BT, data to be the best current information upon which to define a sound speed profile (SSP); and, the historical data extending below the BT profile is the most reasonable information available to merge with the BT data to form a representative up-to-date SSP.

- 1.3.1 A shallow water case is defined when the deepest depth of the input BT data is above 200m. This excludes a merge with historical data -- e.g. an operator cannot input a shallow BT profile to merge with historical data for a deeper water mass. In shallow areas where BT data is sufficient, a shallow water case should be specified by another input parameter, rather than the deepest BT profile depth.
- 1.3.2 For a shallow water case, the salinity is set to 35 PPT. This is considered valid everywhere except in the Mediterranean Sea where 38 PPT is more appropriate. In keeping with the philosophy of making use of the "best" information available, historical data (salinity) should still be utilized whenever it's available.
- 1.3.3 Coding of constants is more efficient when using the form  $+X.XXE+YY$ , rather than  $+X.XX*10.**(-YY)$  (see subroutines SGMTST and SIGMAT).
- 1.3.4 There are inconsistencies between the ICAPS program and the reference report, "The ICAPS Water Mass History File," by Alvan Fisher, Jr., May 1978.
  - 1.3.4.1 The program implementation of the synthesized temperature algorithm (see Enclosure 5), is reasonable, though the approximation to the synthesizing algorithm is unnecessary.
  - 1.3.4.2 The density (sigma-t) stability algorithm described in Apperdx A (reference (1)) does not correspond to the implementation. The document states, "... salinity inversion must coincide with a temperature inversion ...". The code assumes that if the density at depth  $Z_j$  is greater than the density at the depth below,  $Z_{j+1}$ , (starting from the bottom of the profile), then recompute the salinity at  $Z_j$  via the stability expression and use this "corrected" salinity value with the temperature to recalculate the density at depth  $Z_j$ . There is no application of the criteria to adjust salinities that are "... within temperature inversions that are more than the temperature maximum minus  $0.25^{\circ}\text{C}$  at the lower boundary of the inversion ...". One should note that the stability expression was derived for a constant temperature of  $10^{\circ}\text{C}$  and salinity ranges of 30 to 40 PPT. This algorithm to "correct" salinity is applied whenever the density does not monotonically increase with depth, and over the temperature ranges of the BT. The BT temperatures can range from approximately  $4^{\circ}\text{C}$  on up to  $27^{\circ}\text{C}$ . This wide range of temperatures suggests the need for a temperature varying stability algorithm --e.g. at depth  $Z_j$ , adjust the historical salinity by the increment indicated by the change in temperature (merge temperature minus historical temperature) to stabilize the water column at depth  $Z_j$  --.
- 1.3.5 Both program versions retrieve a historical profile as described in the report "Description of ICAPS Environmental Data Structure" by John Lever, NAVOCEANO TN 3700-82-79, March 1979. The report presents the file structure and the retrieval algorithm. The following comments may enable the report to be more useful; particularly for profile revisions.



- 1.3.5.1 Expand the text to specifically define the ordering of profiles (water masses) for a geographical location. Although the ordering is intrinsic to the retrieval design (refer to report figure 6), the following conditions being stated would clarify the profile data:

When more than one water mass represent a geographical location, let  $1 \leq N \leq 5$  be the number of profiles, then  $XMINT2(i)$ ,  $XMAXT2(i)$ ,  $i=1, N$  must be defined (temperature tolerances at 200m), and

- 1)  $XMINT2(i) \leq XMAXT2(i)$  for  $i=1, N$
- 2)  $XMINT2(i) = XMAXT2(i-1)$  for  $i=2, N$

must be true for continuity. The exception to this is that two adjacent profiles can have the same tolerances,  $XMINT2(j) = XMINT2(j+1)$  and  $XMAXT2(j) = XMAXT2(j+1)$ . For this exception, there must be a non-zero flag ( $NOGL(j)$ ) in order to consider the  $j+1$  profile. The tie breaker is the 200-300m gradient tolerances ( $XMINGL(j)$ ,  $XMAXGL(j)$ ) and ( $XMINGL(j+1)$ ,  $XMAXGL(j+1)$ ). When  $NOGL(j)$  is non-zero, then  $XMINGL(j)$  and  $XMAXGL(j)$  must be defined. Profile  $j$  is selected for the BT temperature gradient less than  $XMAXGL(j)$ , otherwise profile  $j+1$  is selected. If the gradient tolerances are given for  $j+1$ , then  $XMAXGL(j) = XMINGL(j+1)$  must occur for continuity. In practice, the tolerances at  $j+1$  are only necessary to make an output message meaningful when the BT gradient at 200-300m is greater than  $XMAXGL(j+1)$ .

- 1.3.5.2 On pages 3 and 9, state that the maximum number of points for a historical profile is 45.
- 1.3.5.3 On pages 10 and 11, the references labelled "400" should be labelled "80" in order to agree with the programs, as do the other labelled references.
- 1.3.5.4 On page 3, line 2 of the second paragraph, " $NOPTS(N)$ " should be " $NOPTI(N)$ " since  $NOPTS$  is set to the  $NOPTI(i)$  value for the selected profile.
- 1.3.5.5 On page 3, the text should state that  $NPRF \leq 5$ .

## 2. SIMAS

### 2.1 PROGRAM ERRORS

2.1.1 Conversion errors occur involving subroutines BT and EDITBT. Metric inputs are converted to English units at least twice. We understand that this is corrected at NUSC but not at NORDA.

2.1.2 Subroutine CKBT shows an error in the algorithm for modifying the historical data to reflect the BT profile layer depth. The DO loop at FORTRAN statement number 550 may be executed with  $K=N15+1$ , i.e.

DO 600 J=N15+1, N15

thus, causing erroneous results.

### 2.2 PROGRAM CAUTIONS

2.2.1 The generated SSP arrays are allocated for 50 points. Subroutine INSERT adds points to the generated profile, and subroutine ENVIRN extends the up to 25 revised BT profile points with historical points. The program does not properly check on this limit. Structurally, depth array element Z(51) is the location of velocity C(1), the surface velocity which could be changed to be the Z(51) value. Also, the test on the 1000 ft point insert into the historical data (line 32, ENVIRN) is incorrect in that DS and VS are dimensioned for 30 each.

2.2.2 Subroutine BT can input up to 25 BT temperature profile points. Subroutine CKBT calls subroutine INSERT to augment the BT points with the interpolated temperature point at 1000 feet, whenever the input BT profile does not have a 1000 ft. point. Since the program allocates space for 25 BT points, an overflow can occur, so that the surface temperature, T(1), value is replaced by the overflow depth value, D(26).

2.2.3 Whenever the BT profile is augmented by a point at 1000 ft., extrapolation is performed when the profile is to be extended by a 1000 ft. point. The SIMAS program also does not consider the reasonability of the extrapolation, see paragraph 1.2.1.2 above.

2.2.4 In subroutines ENVIRN and FORCST, there is no test that the corrected bottom depth value is in the deepest (last) interval which ends with the input fathometer (or chart) value. Consequently, extrapolation may occur.

2.3 COMMENTS -- The methodology is to shift the BT SSP so that at 1000 feet the shifted BT SSP has the same velocity value as does the historical profile. The shifted BT SSP is then extended by those historical profile points below the deepest BT SSP depth.

2.3.1 SIMAS assumes that the historical profile will always extend below the BT profile. This assumption can only be valid if, over each geographical area, the associated historical profile extends down to the deepest bathymetry in the area, and any deepest BT depth value would not be deeper due to measurement errors. Though the assumption will usually

be valid, it is too strict for a general purpose production program. Since the program does not verify the input data to meet this assumption, errored profiles may result (refer to subroutine ENVIRN lines 0052 through 0063).

- 2.3.2 The criteria at 1000 feet does not assure a smooth transition below that depth from the bottom of the shifted BT profile and the attached historical points.
- 2.3.3 Assuming that the usage of the layer depth is important, a comment on the SIMAS layer depth algorithm is appropriate. Subroutine LAYER defines the layer depth to be the shallowest depth after which the velocity gradient first becomes negative. This algorithm requires that the BT data not be noisy, and it consists of points that only define the essential shape of the profile.

ENCLOSURE 5  
ICAPS TEMPERATURE SYNTHESIZING ALGORITHM

Enclosure (5) to  
ODSI memo dtd 4/21/80  
Locklin to Galus

## TEMPERATURE SYNTHESIZING ALGORITHM

ICAPS temperature synthesizing algorithm applies when the historical profile extends below the BT profile. The purpose is to mathematically merge the deep historical temperature profile into the bottom of the BT profile. This algorithm is described as follows:

- Define -- the historical temperature profile to be  
 $(Z_{h_j}, T_{h_j}), j=1, \dots, N_h$
- the BT profile to be  
 $(Z_{BT_k}, T_{BT_k}), k=1, \dots, N_{BT}$
- the merged profile to be  
 $(Z_i, T_i), i=1, \dots, N_M$
- $A = \begin{cases} 0.700 & \text{in the Mediterranean Sea} \\ 0.835 & \text{everywhere else} \end{cases}$

Initialize the merged profile so that

$$(Z_i, T_i) = (Z_{BT_i}, T_{BT_i}), i=1, \dots, N_{BT}, \text{ and}$$

$$Z_{N_{BT}+i} = Z_{h_j}, j=j_0, \dots, N_h$$

where  $i=j-j_0+1$ , so that depth  $Z_{h_{j_0}}$  ( $i=1$ ) is the first selected depth below the BT profile at which the synthesized temperatures are to begin.

$$(N_M = N_{BT} + N_h - j_0 + 1)$$

Let  $T = T_{N_{BT}} - T_H$ , where  $T_H$  is the interpolated historical temperature at the bottom of the BT ( $Z_{N_{BT}}$ ).

The synthesizing algorithm is given by

$$T_{N_{BT}+i} = T_{h_j} + \left[ A (Z_{h_j} - Z_{N_{BT}}) / 100 \right] \Delta T$$

Clearly, the first synthesized temperature,  $T_{NBT+1}$  becomes  $T_{BT_{NBT}}$  as  $Z_{h_{j_0}}$  approaches (merges with) the last BT depth.

- A. Report number NOO RP-19, on page 1, presents, for the synthesized temperature, the equation

$$T_{NBT+i} = TH_j + K_j (K_{j-1} \Delta T)$$

$$\text{with } K_{j_0-1} = 1 \text{ and } K_j = A^{(Z_{h_j} - Z_{h_{j-1}})/100}$$

- B. The ICAPS programs use the approximating equation

$$T_{NBT+i} = TH_j + \left( \prod_{r=j_0}^{r=j} K_r \right) \Delta T$$

$$\text{with } K_r = A^{(Z_{h_j} - Z_{h_{j-1}})/100}$$

$$\text{for } i=1, \quad K_{j_0} = A^{(Z_{h_{j_0}} - Z_{h_{j_0-1}})/100}$$

$$\begin{aligned} i=2, \quad K_{j_0+1} K_{j_0} &= \left[ A^{(Z_{h_{j_0+1}} - Z_{h_{j_0}})/100} \right] \left[ A^{(Z_{h_{j_0}} - Z_{h_{j_0-1}})/100} \right] \\ &= A^{(Z_{h_{j_0+1}} - Z_{h_{j_0-1}})/100} \end{aligned}$$

$$\vdots$$

$$i=i, \quad K_j \dots K_{j_0} = A^{(Z_{h_j} - Z_{h_{j_0-1}})/100}$$

(Note:  $Z_{h_{j_0-1}}$  is used instead of  $Z_{NBT}$ , which means that the product coefficient is at most off by  $A^{1/2}$  using the 50m tolerance).

ENCLOSURE 6  
TEST RESULTS

Enclosure (6) to  
ODSI memo dtd 4/21/80  
Locklin to Galus

## TEST RESULTS

The Univac 1108 at NAVOCEANO was used to retrieve ICAPS historical data at two geographical locations, (42° 1' N, 9° 55' W) and (31° 3' N, 54° 36' W), herein identified as cases A and B, respectively. This data served as historical data for execution of the CDC ICAPS and SIMAS programs. Six cases were executed by both programs:

- A0, B0      historical data, only, defined sound speed profiles.
- A1, B1      modified historical data defined sound speed profiles. The modification defined the historical profile to have an average constant near-surface salinity.
- A2, B2      Hydrographic station data, provided by E. Hashimoto (NORDA 321), down to 500 meters defines a BT that is merged with the historical data.

The results from these cases between ICAPS and SIMAS, though indicative, only represent the data for these two stations.

1. Cases A0 and B0 reflect the use of Wilson's equation (ICAPS) and Leroy's equation (SIMAS) in the generation of sound speeds. B0 is the "worst" case and shows a difference of 0.3 ft/sec at the surface and becomes -0.6 ft/sec at the bottom of the profile (18144 ft.). This is within the relative accuracy of the models. Though both cases suggest that below approximately 13,000 ft the two methods may begin to slightly diverge.
2. Analysis of Wilson's equation shows that, down to the 500 meters, the approximation of the change in velocity,  $V$ , with respect to salinity,  $S$  is given by

$$\frac{dV}{dS} \approx 1.398 + (3.384)10^{-3}(S-35) - (1.1)10^{-2}T$$

for  $T$  = temperature.

Similarly, Leroy's equation yields

$$\frac{dV}{dS} \approx -0.01(T-18) + 1.2$$

Thus, for salinities 30-40 PPT and temperatures 0-30°C

$$\Delta V_{\max} \approx 1.4 \text{ m/sec for } \Delta S = 1 \text{ PPT}$$

So that, for  $\Delta S \approx 0.1 \text{ PPT}$ , the velocity can change at most 0.14 m/sec (½ ft/sec).



Cases A1 and B1 agree with this near-surface analysis. The largest salinity difference between cases A0, B0 and A1, B1 is at 500 meters, and shown in the table below.

	$\Delta S$	ICAPS	SIMAS
		$\Delta V$	$\Delta V$
A	0.14 PPT	0.6 ft/sec	0.5 ft/sec
B	0.48 PPT	2 ft/sec	2 ft/sec

3. Cases A2 and B2 shows the ICAPS and SIMAS merging results. Either method produces acoustically similar profiles with the layer depths at the surface. The bottom (lower part) of the BT temperatures are within  $0.1^{\circ}\text{C}$ , so excellent agreement is expected. The following tables present the profile features.

A2	ICAPS	SIMAS
surface velocity	4958.1 ft/sec	4956.3 ft/sec
deep sound channel	6562.0 ft	6562.0 ft
	4922.5 ft/sec	4922.7 ft/sec

$\Delta V = 1.8^*$

$$\begin{array}{r} \text{ICAPS BT @ 984 ft} = 4930.8 \\ \text{SIMAS Historical @ 1000 ft} = 4929.5 \\ \hline 1.3 \end{array}$$

B2	ICAPS	SIMAS
surface velocity	5065.7 ft/sec	5063.2 ft/sec.
deep sound channel	3927.2 ft	3937.2 ft/sec.
	4896.7 ft/sec	4896.9 ft/sec.

$\Delta V = 2.5^*$

$$\begin{array}{r} \text{ICAPS BT @ 984 ft} = 4991.5 \\ \text{SIMAS Historical @ 1000 ft} = 4990.4 \\ \hline 1.1 \end{array} \quad \Delta S \approx .1$$

\*The difference in  $\Delta V$  is probably due to the SIMAS profile shift determined at 1000 feet.

ICAPS: TEST CASE A0 - HISTORICAL PROFILE ONLY.

*****HISTORICAL PROFILE*****						
DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
0.00	0.00	16.43	61.57	35.78	1512.777	4963.421
10.00	32.81	16.14	61.05	35.78	1512.058	4961.061
20.00	65.62	15.83	60.49	35.78	1511.269	4958.475
30.00	98.43	15.39	59.70	35.78	1510.067	4954.529
50.00	164.05	14.41	57.94	35.78	1507.288	4945.413
75.00	246.08	13.57	56.43	35.79	1504.977	4937.831
100.00	328.10	13.06	55.51	35.78	1503.683	4933.585
125.00	410.13	12.86	55.15	35.76	1503.397	4932.647
150.00	492.15	12.68	54.82	35.75	1503.189	4931.960
200.00	656.20	12.39	54.30	35.71	1502.973	4931.255
250.00	820.25	12.05	53.69	35.67	1502.580	4929.963
300.00	984.30	11.81	53.26	35.64	1502.534	4929.814
400.00	1312.40	11.34	52.41	35.59	1502.476	4929.624
500.00	1640.50	11.06	51.91	35.59	1503.135	4931.787
600.00	1968.60	10.93	51.67	35.67	1504.424	4936.015
800.00	2624.80	10.83	51.49	35.87	1507.626	4946.520
1000.00	3281.00	10.47	50.85	35.97	1509.782	4953.595
1200.00	3937.20	9.74	49.53	35.94	1510.429	4955.717
1500.00	4921.50	6.84	44.31	35.47	1503.860	4934.163
2000.00	6562.00	4.02	39.24	35.05	1500.321	4922.554
2500.00	8202.50	3.21	37.78	34.97	1505.329	4938.986
3000.00	9843.00	2.83	37.09	34.94	1512.281	4961.793
4000.00	13124.00	2.54	36.57	34.91	1528.456	5014.864
5000.00	16405.00	2.56	36.61	34.91	1546.291	5073.379

BT NOT INPUT. RETRIEVED HISTORY TO BE USED

RETRIEVED DATA			
DEP (M)	TEMP (C)	SAL (PPT)	
0.	16.43	35.78	
10.	16.14	35.78	
20.	15.83	35.78	
30.	15.39	35.78	
50.	14.41	35.78	
75.	13.57	35.79	
100.	13.06	35.78	
125.	12.86	35.76	
150.	12.68	35.75	
200.	12.39	35.71	
250.	12.05	35.67	
300.	11.81	35.64	
400.	11.34	35.59	
500.	11.06	35.59	
600.	10.93	35.67	
800.	10.83	35.87	
1000.	10.47	35.97	
1200.	9.74	35.94	
1500.	6.84	35.47	
2000.	4.02	35.05	

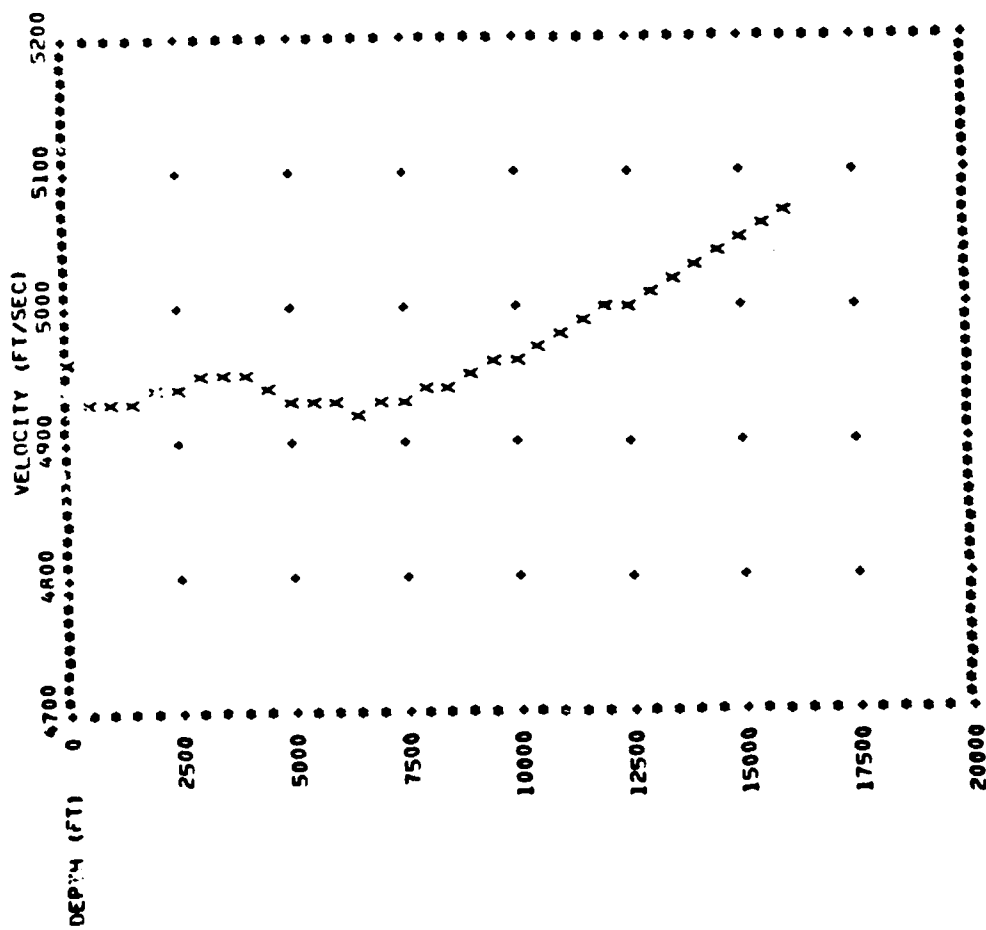
3000. 2.83 34.94  
4. 1  
5000. 2.56 34.91

\*\*\*\*\*ICAPS GENERATED SOUND VELOCITY PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
0.00	0.00	16.43	61.57	35.78	1512.777	4963.421
10.00	32.81	16.14	61.05	35.78	1512.658	4961.041
20.00	65.62	15.83	60.49	35.78	1511.269	4958.475
30.00	98.43	15.39	59.70	35.78	1510.067	4954.529
40.00	131.24	14.41	57.94	35.78	1507.288	4945.413
50.00	164.05	13.57	56.43	35.79	1504.977	4937.831
60.00	196.86	13.06	55.51	35.78	1503.683	4933.585
70.00	229.67	12.86	55.15	35.75	1503.397	4932.647
80.00	262.48	12.58	54.62	35.75	1503.188	4931.960
90.00	295.29	12.39	54.30	35.71	1502.973	4931.255
100.00	328.10	12.05	53.69	35.67	1502.580	4929.963
110.00	360.91	11.81	53.26	35.64	1502.534	4929.814
120.00	393.72	11.34	52.41	35.59	1502.476	4929.624
130.00	426.53	11.06	51.91	35.59	1503.135	4931.787
140.00	459.34	10.93	51.67	35.67	1504.424	4936.015
150.00	492.15	10.83	51.49	35.87	1507.626	4946.520
160.00	524.96	10.47	50.85	35.97	1509.782	4953.595
170.00	557.77	9.74	49.53	35.94	1510.429	4955.717
180.00	590.58	6.84	44.31	35.47	1503.860	4934.163
190.00	623.39	4.02	39.24	35.05	1500.321	4922.554
200.00	656.20	3.21	37.78	34.97	1505.329	4938.986
210.00	689.01	2.83	37.09	34.94	1512.281	4961.793
220.00	721.82	2.54	36.57	34.91	1528.456	5014.864
230.00	754.63	2.56	36.61	34.91	1546.291	5073.379

THE LAYER IS AT 0.00 FEET ( 0.00 METERS).

\*\*\*VELOCITY PROFILE\*\*\*



DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
0.00	0.00	27.28	81.10	36.64	1541.821	5058.721
10.00	32.81	26.50	79.66	36.63	1540.451	5054.219
20.00	65.62	25.87	78.57	36.62	1538.980	5049.393
30.00	98.43	24.62	76.32	36.62	1536.242	5040.410
40.00	131.24	21.83	71.29	36.64	1529.714	5018.991
50.00	164.05	20.42	68.76	36.58	1526.351	5007.959
60.00	196.86	19.37	66.87	36.52	1523.828	4999.679
70.00	229.67	18.85	65.93	36.49	1522.750	4996.144
80.00	262.48	18.47	65.25	36.49	1522.085	4993.960
90.00	295.29	18.00	64.40	36.45	1521.510	4992.073
100.00	328.10	17.62	63.72	36.40	1521.166	4990.946
110.00	360.91	17.30	63.14	36.38	1521.024	4990.478
120.00	393.72	16.41	61.54	36.19	1517.774	4986.378
130.00	426.53	15.18	59.32	35.99	1517.375	4978.507
140.00	459.34	13.51	56.32	35.73	1513.319	4965.198
150.00	492.15	12.37	54.27	35.27	1501.571	4926.655
160.00	524.96	11.83	53.29	35.08	1493.941	4901.319
170.00	557.77	11.70	53.06	35.06	1492.518	4896.953
180.00	590.58	11.54	52.77	35.05	1494.066	4901.964
190.00	623.39	11.70	53.06	34.99	1498.986	4918.172
200.00	656.20	11.70	53.06	34.97	1505.836	4940.647
210.00	689.01	11.70	53.06	34.94	1511.601	4959.563
220.00	721.82	11.70	53.06	34.89	1527.412	5011.439
230.00	754.63	11.70	53.06	34.84	1544.435	5067.291
240.00	787.44	11.70	53.06	34.84	1562.328	5125.998

BT NOT INPUT. RETRIEVED HISTORY TO BE USED

DEPTH (M)	TEMP (C)	SAL (PPT)
0	27.28	36.64
10	26.59	36.63
20	25.87	36.62
30	24.62	36.62
40	21.83	36.64
50	20.42	36.58
60	19.37	36.52
70	18.85	36.49
80	18.47	36.49
90	18.00	36.45
100	17.62	36.40
110	17.30	36.38
120	16.41	36.19
130	15.18	35.99
140	13.51	35.73
150	12.37	35.27
160	11.83	35.08
170	11.70	35.06
180	11.54	35.05
190	11.70	35.06
200	11.70	35.06

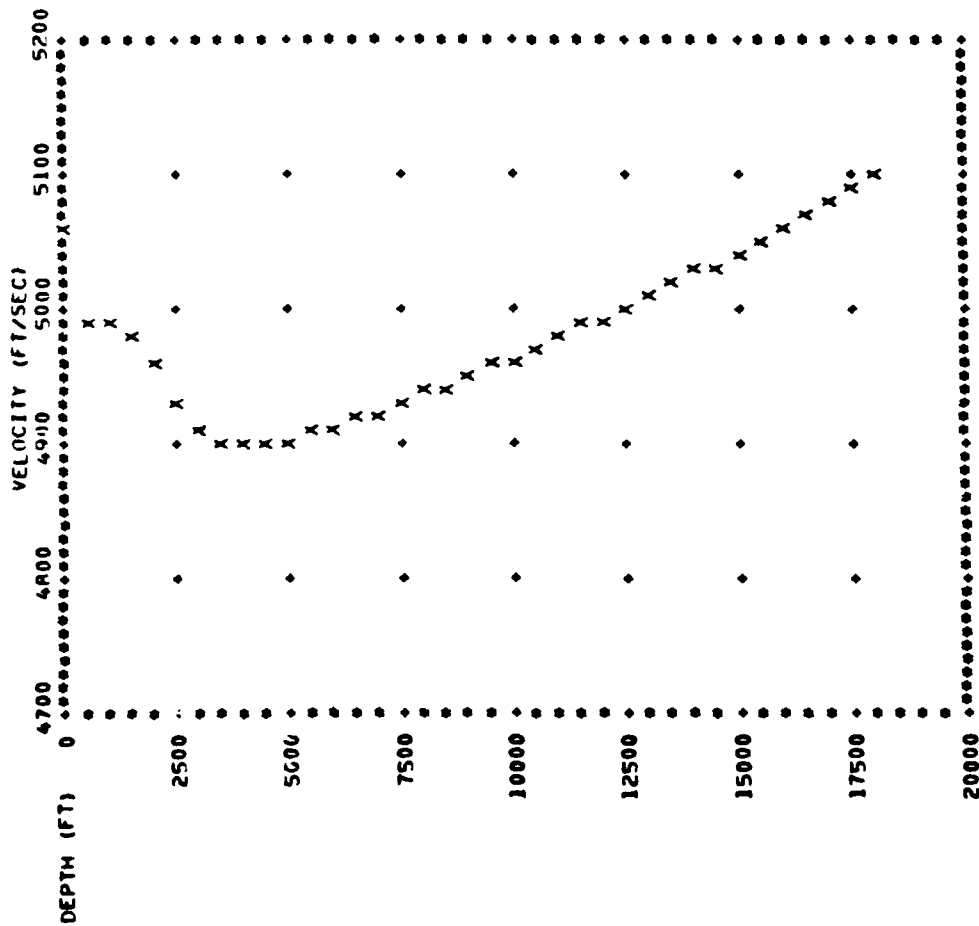
2500.	3.33	34.97
3000.	2.7	34.94
4000.	2.30	34.89
5000.	2.14	34.84
5530.	2.12	34.84

\*\*\*\*\*ICAP: GENERATED SOUND VELOCITY PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
0.00	0.00	27.28	81.10	36.64	1541.823	5058.721
10.00	32.81	26.59	79.86	36.63	1540.451	5054.219
20.00	65.62	25.87	78.57	36.62	1538.980	5049.393
30.00	98.43	24.62	76.32	36.62	1536.242	5040.410
40.00	131.24	21.43	71.29	36.64	1529.714	5018.991
50.00	164.05	20.42	68.76	36.58	1526.351	5007.959
60.00	196.86	19.37	66.87	36.52	1523.828	4999.679
70.00	229.67	18.35	65.03	36.49	1522.750	4996.144
80.00	262.48	18.47	65.25	36.49	1522.085	4993.960
90.00	295.29	18.00	64.40	36.45	1521.510	4992.073
100.00	328.10	17.62	63.72	36.40	1521.166	4990.946
110.00	360.91	17.30	63.14	35.38	1521.024	4990.378
120.00	393.72	16.41	61.54	35.15	1519.774	4985.378
130.00	426.53	15.18	59.32	35.99	1517.375	4978.507
140.00	459.34	13.51	56.32	35.73	1513.318	4965.198
150.00	492.15	9.37	48.87	35.27	1501.571	4926.655
160.00	524.96	6.57	43.83	35.08	1493.941	4901.619
170.00	557.77	5.39	41.70	35.06	1492.518	4896.953
180.00	590.58	4.54	40.17	35.05	1494.046	4901.964
190.00	623.39	3.72	38.70	34.99	1498.986	4918.172
200.00	656.20	3.33	37.99	34.97	1505.836	4940.647
210.00	689.01	2.67	36.81	34.94	1511.601	4959.563
220.00	721.82	2.39	36.14	34.89	1527.412	5011.439
230.00	754.63	2.14	35.85	34.84	1544.435	5067.291
240.00	787.44	2.12	35.81	34.84	1553.884	5098.292

THE LAYER IS AT 0.00 FEET ( 0.00 METERS).

\*\*\*VELOCITY PROFILE\*\*\*





ICAPS: TEST CASE A1 - HISTORICAL PROFILE ONLY, CONSTANT SALINITY DOWN TO 500 METERS.

*****HISTORICAL PROFILE*****						
DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
0.00	0.00	16.43	61.57	35.73	1512.713	4963.210
10.00	32.81	16.14	61.05	35.73	1511.993	4960.849
20.00	65.62	15.83	60.49	35.73	1511.205	4958.262
30.00	98.43	15.39	59.70	35.73	1510.002	4954.316
50.00	164.05	14.41	57.94	35.73	1507.223	4945.197
75.00	246.08	13.57	56.43	35.73	1504.899	4937.572
100.00	328.10	13.06	55.51	35.73	1503.617	4933.367
125.00	410.13	12.86	55.15	35.73	1503.356	4932.511
150.00	492.15	12.68	54.82	35.73	1503.159	4931.865
200.00	656.20	12.39	54.30	35.73	1502.995	4931.326
250.00	820.25	12.05	53.69	35.73	1502.652	4930.200
300.00	984.30	11.81	53.26	35.73	1502.645	4930.177
400.00	1312.40	11.34	52.41	35.73	1502.651	4930.197
500.00	1640.50	11.06	51.91	35.73	1503.311	4932.362
600.00	1968.60	10.93	51.67	35.67	1504.424	4936.015
800.00	2624.80	10.83	51.49	35.87	1507.626	4946.520
1000.00	3281.70	10.47	50.85	35.97	1509.782	4953.595
1200.00	3937.20	9.74	49.53	35.94	1510.429	4955.717
1500.00	4921.50	6.84	44.31	35.47	1503.860	4934.163
2000.00	6562.00	4.02	39.24	35.05	1500.321	4922.554
2500.00	8202.50	3.21	37.78	34.97	1505.329	4938.985
3000.00	9843.00	2.13	37.00	34.94	1512.281	4961.793
4000.00	13124.00	2.57	36.57	34.91	1528.456	5014.864
5000.00	16405.00	2.71	36.61	34.91	1546.291	5073.379

INPUT. RETRIEVED HISTORY TO BE USED

RETRIEVED DATA			
DEP (M)	TEMP (C)	SAL (PPT)	
0.	16.43	35.73	
10.	16.14	35.73	
20.	15.83	35.73	
30.	15.39	35.73	
50.	14.41	35.73	
75.	13.57	35.73	
100.	13.06	35.73	
125.	12.86	35.73	
150.	12.68	35.73	
200.	12.39	35.73	
250.	12.05	35.73	
300.	11.81	35.73	
400.	11.34	35.73	
500.	11.06	35.73	
600.	10.93	35.67	
800.	10.83	35.87	
1000.	10.47	35.97	
1200.	9.74	35.94	
1500.	5.84	35.47	

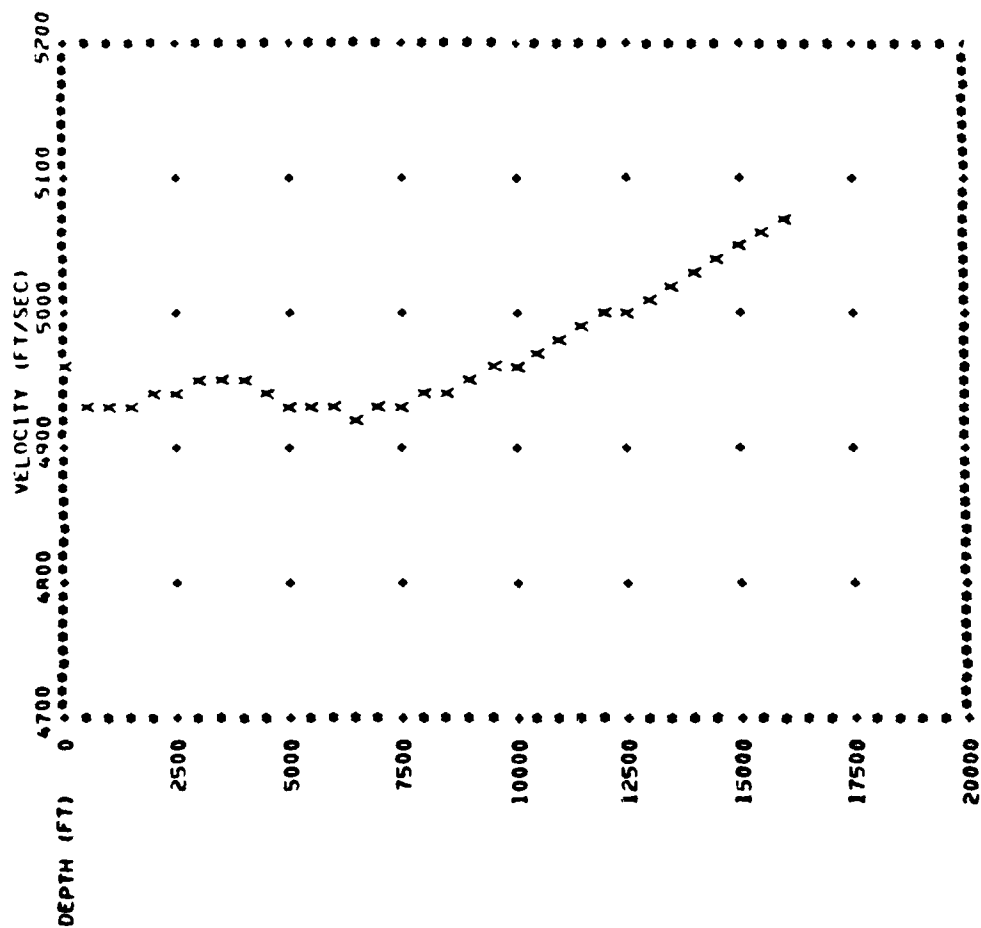
2500. 3.21 34.91  
3000. 2.83 34.94  
4000. 2.56 34.91  
5000. 2.56 34.91

\*\*\*\*\*ICAPS GENERATED SOUND VELOCITY PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
0.00	0.00	16.43	61.57	35.73	1512.713	4963.210
10.00	32.81	16.14	61.05	35.73	1511.993	4960.849
20.00	65.62	15.83	60.49	35.73	1511.205	4958.262
30.00	98.43	15.39	59.70	35.73	1510.002	4954.316
40.00	131.24	14.41	57.94	35.73	1507.223	4945.197
50.00	164.05	13.57	56.43	35.73	1504.899	4937.573
60.00	196.86	13.06	55.51	35.73	1503.617	4933.367
70.00	229.67	12.86	55.15	35.73	1503.356	4932.511
80.00	262.48	12.68	54.82	35.73	1503.159	4931.865
90.00	295.29	12.39	54.30	35.73	1502.995	4931.326
100.00	328.10	12.05	53.69	35.73	1502.652	4930.200
110.00	360.91	11.81	53.26	35.73	1502.645	4930.177
120.00	393.72	11.34	52.41	35.73	1502.651	4930.197
130.00	426.53	11.06	51.91	35.73	1503.311	4932.362
140.00	459.34	10.93	51.67	35.67	1504.424	4936.015
150.00	492.15	10.83	51.49	35.87	1507.626	4946.520
160.00	524.96	10.47	50.85	35.97	1509.782	4953.595
170.00	557.77	9.74	49.53	35.94	1510.429	4955.717
180.00	590.58	6.84	44.31	35.47	1503.360	4934.103
190.00	623.39	4.02	39.24	35.05	1500.321	4922.554
200.00	656.20	3.21	37.78	34.97	1505.329	4938.900
210.00	689.01	2.83	37.09	34.94	1512.281	4961.793
220.00	721.82	2.54	36.57	34.91	1528.456	5014.864
230.00	754.63	2.56	36.61	34.91	1546.291	5073.379

THE LAYER IS AT 0.00 FEET ( 0.00 METERS).

\*\*\*VELOCITY PROFILE\*\*\*



ICAPS: TEST CASE B1 - HISTORICAL PROFILE ONLY, CONSTANT SALINITY DOWN TO 500 METERS.

\*\*\*\*\*HISTORICAL PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
0.00	0.00	27.28	81.10	36.47	1541.641	5058.124
10.00	32.81	26.59	79.86	36.47	1540.279	5053.655
20.00	65.62	25.87	78.57	36.47	1538.818	5048.861
30.00	98.43	24.62	76.32	36.47	1536.078	5039.871
50.00	164.05	21.83	71.29	36.47	1529.522	5018.361
75.00	246.08	20.42	68.76	36.47	1526.227	5007.551
100.00	328.10	19.37	66.87	36.47	1523.774	4999.501
125.00	410.13	18.85	65.93	36.47	1522.732	4996.082
150.00	492.15	18.47	65.25	36.47	1522.066	4993.899
200.00	656.20	18.00	64.40	36.47	1521.539	4992.169
250.00	820.25	17.62	63.72	36.47	1521.256	4991.240
300.00	984.30	17.30	63.14	36.47	1521.138	4990.853
400.00	1312.40	16.41	61.54	36.47	1520.121	4987.517
500.00	1640.50	15.18	59.32	36.47	1517.973	4980.470
600.00	1968.60	13.51	56.32	35.73	1513.318	4965.198
800.00	2624.80	9.37	48.87	35.27	1501.571	4926.655
1000.00	3281.00	6.57	43.83	35.08	1493.941	4901.619
1200.00	3937.20	5.39	41.70	35.06	1492.518	4896.953
1500.00	4921.50	4.54	40.17	35.05	1494.046	4901.964
2000.00	6562.00	3.72	38.70	34.99	1498.986	4918.172
2500.00	8202.50	3.33	37.99	34.97	1505.836	4940.647
3000.00	9843.00	2.67	36.81	34.94	1511.601	4959.563
4000.00	13124.00	2.30	36.14	34.89	1527.412	5011.439
5000.00	16405.00	2.14	35.85	34.84	1544.435	5067.291
6000.00	19686.00	2.10	35.78	34.84	1562.328	5125.998

BT NOT INPUT, RETRIEVED HISTORY TO BE USED

RETRIEVED DATA

DEP (M)	TEMP (C)	SAL (PPT)
0.	27.28	36.47
10.	26.59	36.47
20.	25.87	36.47
30.	24.62	36.47
50.	21.83	36.47
75.	20.42	36.47
100.	19.37	36.47
125.	18.85	36.47
150.	18.47	36.47
200.	18.00	36.47
250.	17.62	36.47
300.	17.30	36.47
400.	16.41	36.47
500.	15.18	36.47
600.	13.51	35.73
800.	9.37	35.27
1000.	6.57	35.08
1200.	5.39	35.06
1500.	4.54	35.05

2500.	3.33	34.97
4000.	2.67	34.94
5000.	2.30	34.89
5530.	2.14	34.84
	2.12	34.84

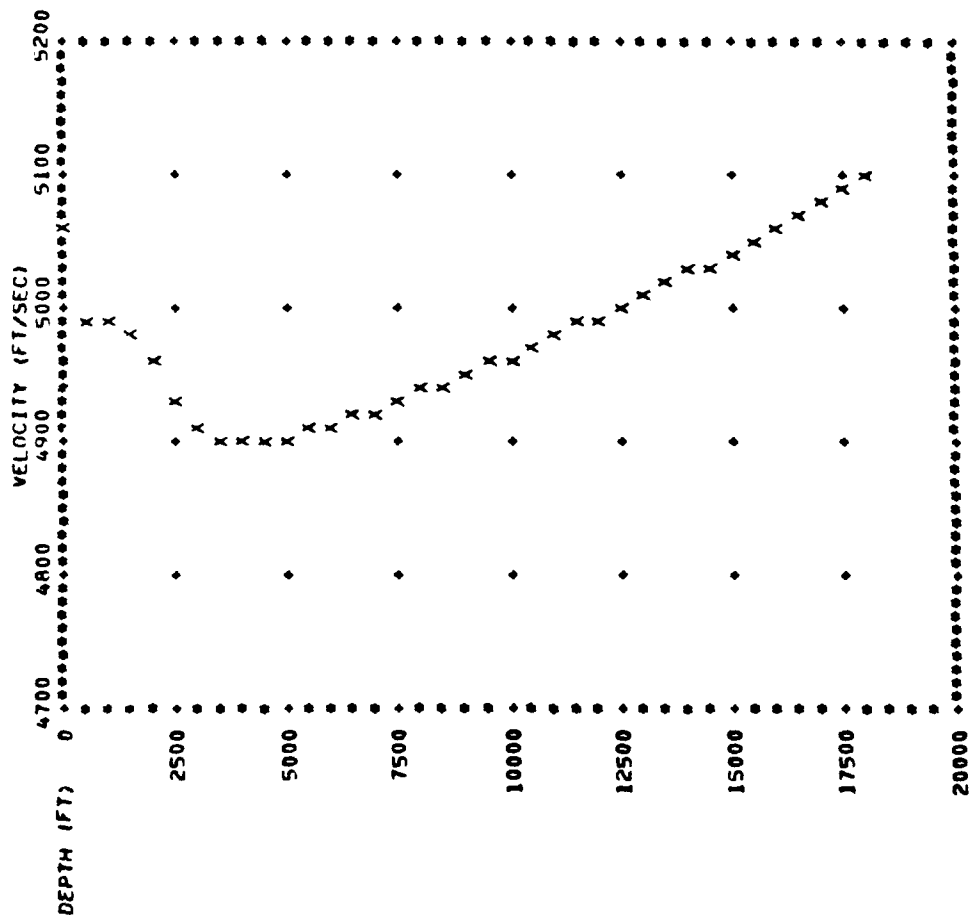
\*\*\*\*\*ICAPS GENERATED SOUND VELOCITY PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
0.00	0.00	27.1	81.10	36.47	1541.641	5058.124
10.00	32.81	27.1	79.86	36.47	1540.279	5053.655
20.00	65.62	25.47	78.57	36.47	1538.818	5048.861
30.00	98.43	24.62	76.32	36.47	1536.078	5039.871
50.00	164.05	21.83	71.29	36.47	1529.522	5018.361
75.00	246.08	20.42	68.76	36.47	1526.227	5007.551
100.00	328.10	19.37	66.87	36.47	1523.774	4999.501
125.00	410.13	18.85	65.93	36.47	1522.732	4996.082
150.00	492.15	18.47	65.25	36.47	1522.066	4993.899
200.00	656.20	18.00	64.40	36.47	1521.539	4992.169
250.00	820.25	17.62	63.72	36.47	1521.256	4991.240
300.00	984.30	17.30	63.14	36.47	1521.138	4990.853
400.00	1312.40	16.41	61.54	36.47	1520.121	4987.517
500.00	1640.50	15.18	59.32	36.47	1517.973	4980.470
600.00	1968.60	13.51	56.32	35.73	1513.318	4965.198
800.00	2624.80	9.37	48.87	35.27	1501.571	4926.655
1000.00	3281.00	6.57	43.83	35.08	1493.941	4901.619
1200.00	3937.20	5.39	41.70	35.06	1492.518	4896.953
1500.00	4921.50	4.54	40.17	35.05	1494.046	4901.964
2000.00	6562.00	3.72	38.70	34.99	1498.986	4918.172
2500.00	8202.50	3.33	37.99	34.97	1505.836	4940.647
3000.00	9843.00	2.67	36.81	34.94	1511.601	4959.563
4000.00	13124.00	2.30	36.14	34.89	1527.412	5011.439
5000.00	16405.00	2.14	35.85	34.84	1544.435	5067.251
5530.00	18143.93	2.12	35.81	34.84	1553.884	5098.292

D-45

THE LAYER IS AT 0.00 FEET ( 0.00 METERS).

\*\*\*VELOCITY PROFILE\*\*\*



ICAPS: TEST CASE A2 - MERGE.

\*\*\*\*\*HISTORICAL PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
0.00	0.00	16.43	61.57	35.78	1512.777	4963.421
10.00	32.81	16.14	61.05	35.78	1512.058	4961.061
20.00	65.62	15.83	60.49	35.78	1511.269	4958.475
30.00	98.43	15.39	59.70	35.78	1510.067	4954.529
50.00	164.05	14.41	57.94	35.78	1507.288	4945.413
75.00	246.08	13.57	56.43	35.79	1504.977	4937.831
100.00	328.10	13.06	55.51	35.78	1503.683	4933.585
125.00	410.13	12.86	55.15	35.76	1503.397	4932.647
150.00	492.15	12.68	54.82	35.75	1503.188	4931.960
200.00	656.20	12.39	54.30	35.71	1502.973	4931.255
250.00	820.25	12.05	53.69	35.67	1502.580	4929.963
300.00	984.30	11.81	53.26	35.64	1502.534	4929.814
400.00	1312.40	11.34	52.41	35.59	1502.476	4929.624
500.00	1640.50	11.06	51.91	35.59	1503.135	4931.787
600.00	1968.60	10.93	51.67	35.67	1504.424	4936.015
800.00	2624.80	10.83	51.69	35.87	1507.626	4946.520
1000.00	3281.00	10.47	50.85	35.97	1509.782	4953.595
1200.00	3937.20	9.74	49.53	35.94	1510.429	4955.717
1500.00	4921.50	6.84	44.31	35.47	1503.860	4934.163
2000.00	6562.00	4.02	39.24	35.05	1500.321	4922.554
2500.00	8202.50	3.21	37.78	34.97	1505.329	4938.986
3000.00	9843.00	2.83	37.09	34.94	1512.281	4961.793
4000.00	13124.00	2.54	36.57	34.91	1528.456	5014.864
5000.00	16405.00	2.56	36.61	34.91	1546.291	5073.379

MERGED DATA

HISTORICAL DATA

(MERGE FACTOR = 835\*10\*\*3)

DEPTH (M)	TEMP (C)	SAL (PPT)	DEPTH (M)	TEMP (C)	SAL (PPT)	DEPTH (M)	TEMP (C)	SAL (PPT)
0.	15.90	35.78	0.	16.43	35.78	0.	15.90	35.78
10.	15.62	35.78	10.	16.14	35.78	10.	15.62	35.78
20.	15.17	35.78	20.	15.83	35.78	20.	15.17	35.78
30.	14.97	35.78	30.	15.39	35.78	30.	14.97	35.78
50.	14.70	35.78	50.	14.41	35.78	50.	14.70	35.78
75.	13.75	35.79	75.	13.57	35.79	75.	13.75	35.79
100.	13.02	35.78	100.	13.06	35.78	100.	13.02	35.78
125.	12.85	35.76	125.	12.86	35.76	125.	12.85	35.76
150.	12.69	35.75	150.	12.68	35.75	150.	12.69	35.75
200.	12.40	35.71	200.	12.39	35.71	200.	12.40	35.71
250.	12.14	35.67	250.	12.05	35.67	250.	12.14	35.67
300.	11.90	35.64	300.	11.81	35.64	300.	11.90	35.64
400.	11.36	35.59	400.	11.34	35.59	400.	11.36	35.59
500.	11.04	35.59	500.	11.06	35.59	500.	11.04	35.59
			600.	10.93	35.67	600.	10.91	35.67
			800.	10.83	35.87	800.	10.82	35.87



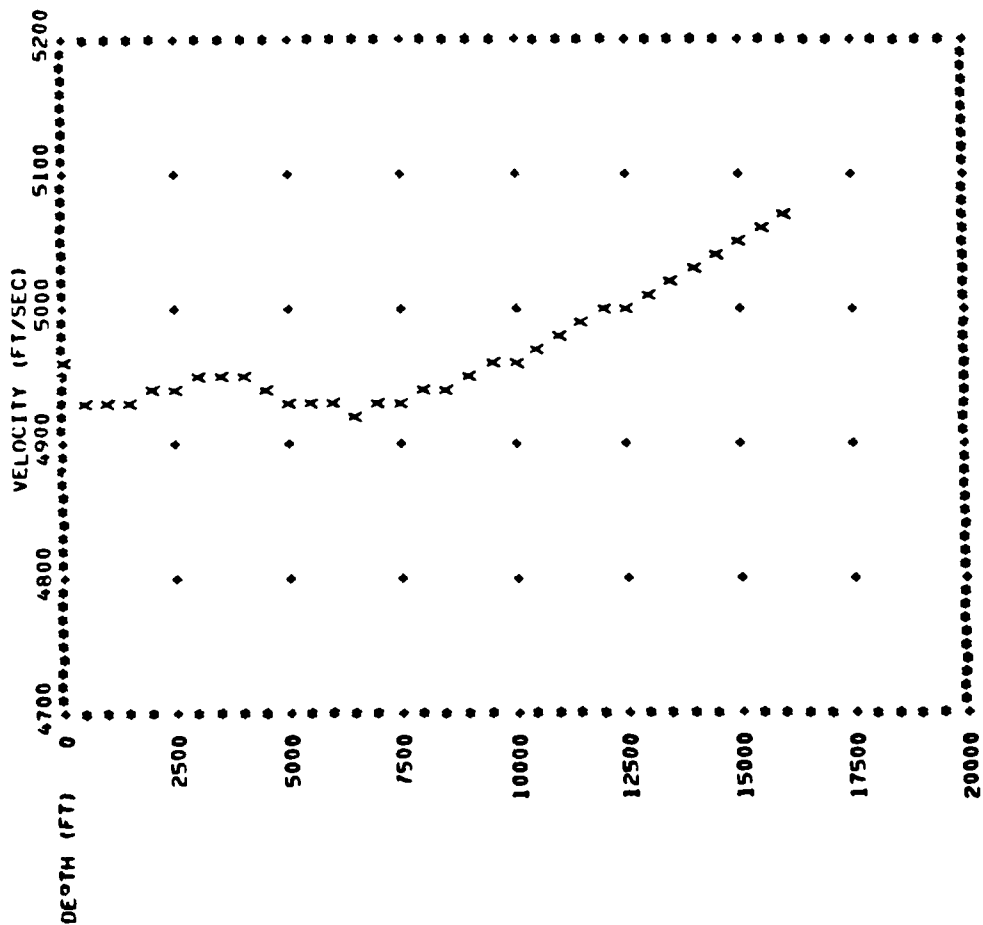
1200.	9.74	35.94	1200.	9.73	35.94
150	6	35	1500.	6.84	35.47
2000.	4.02	35.05	2000.	4.02	35.05
2500.	3.21	34.97	2500.	3.21	34.97
3000.	2.83	34.94	3000.	2.83	34.94
4000.	2.54	34.91	4000.	2.54	34.91
5000.	2.56	34.91	5000.	2.56	34.91

\*\*\*\*\*ICAPS GENERATED SOUND VELOCITY PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
0.00	0.00	15.90	60.62	35.78	1511.158	4958.110
10.00	32.81	15.62	60.12	35.78	1510.456	4955.806
20.00	65.62	15.17	59.31	35.78	1509.214	4951.731
30.00	98.43	14.97	58.95	35.78	1508.747	4950.198
50.00	164.05	14.70	58.46	35.78	1508.216	4948.458
75.00	246.08	13.75	56.75	35.79	1505.568	4939.770
100.00	328.10	13.02	55.44	35.78	1503.550	4933.146
125.00	410.13	12.85	55.13	35.76	1503.364	4932.537
150.00	492.15	12.69	54.84	35.75	1503.222	4932.070
200.00	656.20	12.40	54.32	35.74	1503.007	4931.367
250.00	820.25	12.14	53.85	35.67	1502.888	4930.976
300.00	984.30	11.90	53.42	35.64	1502.845	4930.834
400.00	1312.40	11.36	52.45	35.59	1502.546	4929.853
500.00	1640.50	11.04	51.87	35.59	1503.065	4931.555
600.00	1968.60	10.91	51.64	35.67	1504.365	4935.822
800.00	2624.80	10.82	51.47	35.87	1507.584	4946.384
1000.00	3281.00	10.46	50.83	35.97	1509.753	4953.500
1200.00	3937.20	9.73	49.52	35.94	1510.408	4955.649
1500.00	4921.50	8.84	44.31	35.47	1503.847	4934.121
2000.00	6562.00	4.02	39.23	35.05	1500.316	4922.536
2500.00	8202.50	3.21	37.78	34.97	1505.327	4938.978
3000.00	9843.00	2.83	37.09	34.94	1512.280	4961.790
4000.00	13124.00	2.54	36.57	34.91	1528.456	5014.864
5000.00	16405.00	2.56	36.61	34.91	1546.291	5073.379

THE LAYER IS AT 0.00 FEET 0.00 METERS).

\*\*\*VELOCITY PROFILE\*\*\*



ICAPS: TEST CASE H2 - MERGE.

\*\*\*\*\*HISTORICAL PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
0.00	0.00	27.28	81.10	36.64	1541.823	5058.721
10.00	32.81	26.59	79.86	36.63	1540.451	5054.219
20.00	65.62	25.87	78.57	36.62	1538.980	5049.393
30.00	98.43	24.62	76.32	36.62	1536.242	5040.410
40.00	131.24	21.83	71.29	36.64	1529.714	5018.991
50.00	164.05	20.42	68.76	36.58	1526.351	5007.959
60.00	196.86	19.37	66.87	36.52	1523.828	4999.679
70.00	229.67	18.85	65.93	36.49	1522.750	4996.144
80.00	262.48	18.47	65.25	36.49	1522.085	4993.960
90.00	295.29	18.00	64.40	36.45	1521.510	4992.073
100.00	328.10	17.62	63.72	36.40	1521.166	4990.946
110.00	360.91	17.30	63.14	36.38	1521.024	4990.478
120.00	393.72	16.41	61.54	36.19	1519.774	4986.378
130.00	426.53	15.18	59.32	35.99	1517.375	4978.507
140.00	459.34	13.51	56.32	35.73	1513.318	4965.198
150.00	492.15	9.37	48.87	35.27	1501.571	4926.655
160.00	524.96	6.57	43.83	35.08	1493.941	4901.619
170.00	557.77	5.39	41.70	35.06	1492.518	4896.953
180.00	590.58	4.54	40.17	35.00	1494.046	4901.964
190.00	623.39	3.72	38.70	34.99	1498.986	4918.172
200.00	656.20	3.33	37.99	34.97	1505.836	4940.647
210.00	689.01	2.67	36.81	34.94	1511.601	4959.563
220.00	721.82	2.30	36.14	34.89	1527.412	5011.439
230.00	754.63	2.14	35.85	34.84	1544.435	5067.291
240.00	787.44	2.10	35.78	34.84	1562.328	5125.998

MERGED DATA

HISTORICAL DATA

(MERCATOR = 835\*10\*\*3)

DEPTH (M)	TEMP (C)	SAL (PPT)	DEPTH (M)	TEMP (C)	SAL (PPT)	DEPTH (M)	TEMP (C)	SAL (PPT)
0.	28.26	36.64	0.	27.28	36.64	0.	28.26	36.64
10.	27.88	36.63	10.	26.59	36.63	10.	27.88	36.63
20.	27.80	36.62	20.	25.87	36.62	20.	27.80	36.62
30.	23.82	36.62	30.	24.62	36.62	30.	23.82	36.62
40.	21.47	36.64	40.	21.83	36.64	40.	21.47	36.64
50.	19.93	36.58	50.	20.42	36.58	50.	19.93	36.58
60.	19.10	36.52	60.	19.37	36.52	60.	19.10	36.52
70.	18.66	36.49	70.	18.85	36.49	70.	18.66	36.49
80.	18.30	36.49	80.	18.47	36.49	80.	18.30	36.49
90.	17.83	36.45	90.	18.00	36.45	90.	17.83	36.45
100.	17.66	36.40	100.	17.62	36.40	100.	17.66	36.40
110.	17.41	36.38	110.	17.30	36.38	110.	17.41	36.38
120.	16.54	36.19	120.	16.41	36.19	120.	16.54	36.19
130.	15.11	35.99	130.	15.18	35.99	130.	15.11	35.99
140.	13.51	35.73	140.	13.51	35.73	140.	13.51	35.73

BT DATA

1000.	6.57	35.08	1000.	6.54	35.08
12			200	5.77	35.05
1500.	4.54	35.05	1500.	4.53	35.05
2000.	3.72	34.99	2000.	3.72	34.99
2500.	3.33	34.97	2500.	3.33	34.97
3000.	2.67	34.94	3000.	2.67	34.94
4000.	2.30	34.89	4000.	2.30	34.89
5000.	2.14	34.84	5000.	2.14	34.84
6000.	2.10	34.84	5550.	2.12	34.84

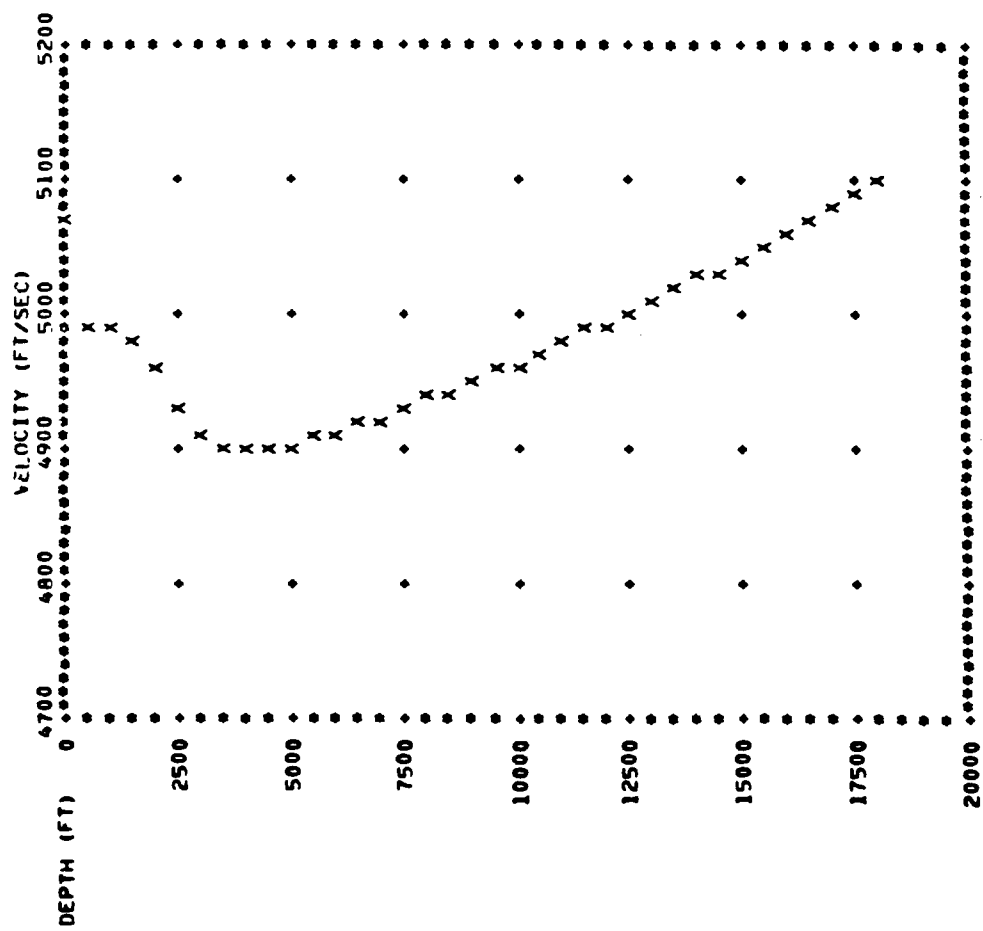
\*\*\*\*\*ICAPS GENERATED SOUND VELOCITY PROFILE\*\*\*\*\*

DEPTH METERS	DEPTH FEET	TEMP. DEG C	TEMP. DEG F	SALIN. P/1000	VELOCITY MT./SEC.	VELOCITY FT./SEC.
0.00	0.00	28.26	82.87	36.64	1543.942	5065.374
10.00	32.81	27.88	82.18	36.63	1543.282	5063.509
20.00	65.62	27.80	82.04	36.62	1543.265	5063.431
30.00	98.43	23.82	74.88	36.62	1534.327	5034.128
50.00	164.05	21.47	70.65	36.64	1528.783	5015.939
75.00	246.08	19.93	67.87	36.58	1525.027	5003.613
100.00	328.10	19.10	66.38	36.52	1523.077	4997.215
125.00	410.13	18.66	65.59	36.49	1522.214	4994.384
150.00	492.15	18.30	64.94	36.49	1521.600	4992.368
200.00	656.20	17.83	64.09	36.45	1521.017	4990.458
250.00	820.25	17.66	63.79	36.40	1521.283	4991.330
300.00	984.30	17.41	63.34	36.38	1521.348	4991.541
400.00	1312.40	16.54	61.77	36.19	1520.167	4987.668
500.00	1640.50	15.11	59.20	35.99	1517.155	4977.784
600.00	1968.60	13.45	56.21	35.73	1513.125	4964.564
800.00	2624.80	9.33	48.79	35.27	1501.421	4926.161
1000.00	3281.00	6.54	43.77	35.08	1493.828	4901.251
1200.00	3937.20	5.37	41.67	35.06	1492.438	4896.689
1500.00	4921.50	4.53	40.15	35.05	1493.998	4901.807
2000.00	6562.00	3.72	38.69	34.90	1498.966	4918.107
2500.00	8202.50	3.33	37.99	34.97	1505.828	4940.621
3000.00	9843.00	2.67	36.80	34.94	1511.598	4959.552
4000.00	13124.00	2.30	36.14	34.89	1527.411	5011.437
5000.00	16405.00	2.14	35.85	34.84	1544.435	5067.291
5530.00	18143.93	2.12	35.81	34.84	1553.884	5098.292

D-53

THE LAYER IS AT 0.00 FEET ( 0.00 METERS).

\*\*\*VELOCITY PROFILE\*\*\*



SIMASr TEST CASE A0 - HISTORICAL PROFILE ONLY.

HISTORICAL PROFILE - THE NEAR-SURFACE AVERAGE SALINITY IS 35.73 PPT.

NO.	DEPTH	VELOCITY
1	0.0	4963.2
2	32.8	4960.9
3	65.6	4958.3
4	98.4	4954.3
5	164.1	4945.2
6	246.1	4937.5
7	328.1	4933.3
8	410.1	4932.3
9	492.2	4931.7
10	656.2	4931.0
11	820.3	4929.7
12	984.3	4929.5
13	1312.4	4929.4
14	1640.5	4931.6
15	1968.6	4935.8
16	2624.8	4946.4
17	3281.0	4953.5
18	3937.2	4955.7
19	4721.5	4934.2
20	6562.0	4922.7
21	8202.5	4939.2
22	9343.0	4962.1
23	13124.0	5015.2
24	16405.0	5073.8

CORRECTED BOTTOM DEPTH IS 2734 FATHOMS  
 LAYER DEPTH IS 0 FEET  
 SOUND VELOCITY AT SURFACE IS 4963.2 FT/SEC

SIMAS GENERATED SOUND VELOCITY PROFILE

NO.	DEPTH	VELOCITY
1	0.0	4963.2
2	32.8	4960.9
3	65.6	4958.3
4	98.4	4954.3
5	164.1	4945.2
6	246.1	4937.5
7	328.1	4933.3
8	410.1	4932.3
9	492.2	4931.7
10	656.2	4931.0
11	820.3	4929.7
12	984.3	4929.5
13	1000.0	4929.5
14	1312.4	4929.4
15	1640.5	4931.6



17	2624.4	4946.4
	1.0	495
19	3937.2	4955.7
20	4921.5	4934.2
21	6562.0	4922.7
22	8202.5	4939.2
23	9843.0	4962.1
24	13124.0	5015.2
25	16405.0	5073.8

SIMAS: TEST CASE 80 - HISTORICAL PROFILE ONLY.

HISTORICAL PROFILE - THE NEAR-SURFACE AVERAGE SALINITY IS 36.47 PPT.

NO.	DEPTH	VELOCITY
1	0.0	5058.4
2	32.8	5054.0
3	65.6	5049.2
4	98.4	5040.3
5	164.1	5014.9
6	246.1	5007.9
7	328.1	4999.6
8	410.1	4996.1
9	492.2	4993.9
10	656.2	4992.0
11	820.3	4990.9
12	984.3	4990.4
13	1312.4	4986.3
14	1640.5	4978.4
15	1968.6	4965.1
16	2624.8	4926.5
17	3281.0	4901.5
18	3937.2	4896.9
19	4921.5	4902.0
20	6562.0	4918.3
21	8202.5	4940.9
22	9843.0	4959.8
23	13124.0	5011.8
24	16405.0	5067.7
25	19686.0	5126.6

CORRECTED BOTTOM DEPTH IS 3024 FATHOMS  
 LAYER DEPTH IS 0 FEET  
 SOUND VELOCITY AT SURFACE IS 5058.4 FT/SEC

SIMAS GENERATED SOUND VELOCITY PROFILE

NO.	DEPTH	VELOCITY
1	0.0	5058.4
2	32.8	5054.0
3	65.6	5049.2
4	98.4	5040.3
5	164.1	5014.9
6	246.1	5007.9
7	328.1	4999.6
8	410.1	4996.1
9	492.2	4993.9
10	656.2	4992.0
11	820.3	4990.9
12	984.3	4990.4
13	1000.0	4990.2
14	1312.4	4986.3

16	1468.6	4965.1
17	7624.4	4014.5
18	3281.0	4774.5
19	3937.2	4896.9
20	4921.5	4902.0
21	6562.0	4918.3
22	8202.5	4940.9
23	9843.0	4959.8
24	13124.0	5011.8
25	16405.0	5067.7
26	18143.9	5098.9

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OCEAN DATA SYSTEMS INC ROCKVILLE MD  
THE CAUSE OF SOUND SPEED PROFILE DIFFERENCES BETWEEN ICAPS AND --ETC(U)  
MAY 80 J H LOCKLIN, B W SCAIFE  
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SIMAS1 TEST CASE A1 - HISTORICAL PROFILE ONLY, CONSTANT SALINITY DOWN TO 500 METERS.

HISTORICAL PROFILE - THE NEAR-SURFACE AVERAGE SALINITY IS 35.73 PPT.

NO.	DEPTH	VELOCITY
1	0.0	4943.0
2	32.8	4960.7
3	65.6	4958.1
4	98.4	4954.1
5	164.1	4944.9
6	246.1	4937.3
7	328.1	4933.1
8	410.1	4932.2
9	492.2	4931.5
10	656.2	4931.0
11	820.3	4929.9
12	984.3	4929.9
13	1312.4	4929.9
14	1640.5	4932.1
15	1968.6	4935.8
16	2624.8	4946.4
17	3281.0	4953.5
18	3937.2	4955.7
19	4921.5	4934.2
20	6562.0	4922.7
21	8202.5	4939.2
22	9843.0	4962.1
23	13124.0	5015.2
24	14405.0	5073.8

CORRECTED BOTTOM DEPTH IS 2734 FATHOMS  
 LAYER DEPTH IS 0 FEET  
 SOUND VELOCITY AT SURFACE IS 4963.0 FT/SEC

SIMAS GENERATED SOUND VELOCITY PROFILE

NO.	DEPTH	VELOCITY
1	0.0	4963.0
2	32.8	4960.7
3	65.6	4958.1
4	98.4	4954.1
5	164.1	4944.9
6	246.1	4937.3
7	328.1	4933.1
8	410.1	4932.2
9	492.2	4931.6
10	656.2	4931.0
11	820.3	4929.9
12	984.3	4929.9
13	1000.0	4929.9
14	1312.4	4929.9
15	1640.5	4932.1

17	2624.8	4946.4
18	1281.	4
19	3937.2	4955.7
20	4921.5	4934.2
21	6562.0	4922.7
22	8202.5	4939.2
23	9843.0	4962.1
24	13124.0	5015.2
25	16405.0	5073.8

SIMAS<sup>®</sup> TEST CASE 81 - HISTORICAL PROFILE ONLY, CONSTANT SALINITY DOWN TO 500 METERS.

HISTORICAL PROFILE - THE NEAR-SURFACE AVERAGE SALINITY IS 36.47 PPT.

NO.	DEPTH	VELOCITY
1	0.0	5057.8
2	32.8	5053.4
3	65.6	5048.7
4	98.4	5039.7
5	164.1	5018.3
6	246.1	5007.5
7	328.1	4999.4
8	410.1	4996.0
9	492.2	4993.8
10	656.2	4992.1
11	820.3	4991.2
12	984.3	4990.8
13	1312.4	4987.4
14	1640.5	4980.4
15	1968.6	4965.1
16	2624.8	4926.5
17	3281.0	4901.5
18	3937.2	4896.9
19	4921.5	4902.0
20	6562.0	4918.3
21	8202.5	4940.9
22	9843.0	4959.8
23	13124.0	5011.8
24	16405.0	5067.7
25	19686.0	5126.6

CORRECTED BOTTOM DEPTH IS 3024 FATHOMS  
 LAYER DEPTH IS 0 FEET  
 SOUND VELOCITY AT SURFACE IS 5057.8 FT/SEC

SIMAS GENERATED SOUND VELOCITY PROFILE

NO.	DEPTH	VELOCITY
1	0.0	5057.8
2	32.8	5053.4
3	65.6	5048.7
4	98.4	5039.7
5	164.1	5018.3
6	246.1	5007.5
7	328.1	4999.4
8	410.1	4996.0
9	492.2	4993.8
10	656.2	4992.1
11	820.3	4991.2
12	984.3	4990.8
13	1000.0	4990.6
14	1312.4	4987.4
15	1640.5	4980.4

16	1968.6	4965.1
17	2620	4901.5
18	3281.0	4901.5
19	3937.2	4896.9
20	4921.5	4902.0
21	6562.0	4918.3
22	8202.5	4940.9
23	9843.0	4959.8
24	13124.0	5011.8
25	16405.8	5067.7
26	18143.9	5098.9



SIMAS TEST CASE A2 - MERGE.

# HISTORICAL PROFILE - THE NEAR-SURFACE AVERAGE SALINITY IS 35.73 PPT.

NO.	DEPTH	VELOCITY
1	0.0	4963.2
2	32.8	4960.9
3	65.6	4958.3
4	98.4	4954.3
5	164.1	4945.2
6	246.1	4937.5
7	328.1	4933.3
8	410.1	4932.3
9	492.2	4931.7
10	656.2	4931.0
11	820.3	4929.7
12	984.3	4929.5
13	1312.4	4929.4
14	1640.5	4931.6
15	1968.6	4935.8
16	2624.8	4946.4
17	3281.0	4953.5
18	3937.2	4955.7
19	4921.5	4934.2
20	6562.0	4922.7
21	8202.5	4939.2
22	9843.0	4962.1
23	13124.0	5015.2
24	16405.0	5073.8

## INPUT DATA FOR BT - METRIC

NO.	DEPTH	TEMP
1	0.0	15.9
2	10.0	15.6
3	20.0	15.2
4	30.0	15.0
5	50.0	14.7
6	75.0	13.8
7	100.0	13.0
8	125.0	12.9
9	150.0	12.7
10	200.0	12.4
11	250.0	12.1
12	300.0	11.9
13	400.0	11.4
14	500.0	11.0

CORRECTED BOTTOM DEPTH IS 2734 FATHOMS  
LAYER DEPTH IS 0 FEET  
SOUND VELOCITY AT SURFACE IS 4956.3 FT/SEC

# SIMAS GENERATED SOUND VELOCITY PROFILE

NO.	DEPTH	VELOCITY
1	0.0	4956.3
2	32.8	4954.0
3	65.6	4949.9
4	98.4	4948.4
5	164.1	4946.6
6	246.1	4937.9
7	328.1	4931.3
8	410.1	4930.7
9	492.2	4930.3
10	656.2	4929.8
11	820.3	4929.6
12	984.3	4929.6
13	1000.0	4929.5
14	1312.4	4928.8
15	1640.5	4930.6
16	1968.6	4935.8
17	2624.8	4940.4
18	3281.0	4953.5
19	3937.2	4955.7
20	4921.5	4934.2
21	6562.0	4922.7
22	8202.5	4939.2
23	9843.0	4962.1
24	13124.0	5015.2
25	16405.0	5073.8

SIMAS: TEST CASE B2 - MENGE.

# HISTORICAL PROFILE - THE NEAR-SURFACE AVERAGE SALINITY IS 36.47 PPT.

NO.	DEPTH	VELOCITY
1	0.0	5058.4
2	32.8	5054.0
3	65.6	5049.2
4	98.4	5040.3
5	164.1	5018.9
6	246.1	5007.9
7	328.1	4999.6
8	410.1	4996.1
9	492.2	4993.9
10	656.2	4992.0
11	820.3	4990.9
12	984.3	4990.4
13	1312.4	4986.3
14	1640.5	4978.4
15	1968.6	4965.1
16	2624.8	4926.5
17	3281.0	4901.5
18	3937.2	4896.9
19	4921.5	4902.0
20	6562.0	4918.3
21	8202.5	4940.9
22	9843.0	4959.8
23	13124.0	5011.8
24	16405.0	5067.7
25	19686.0	5126.6

## INPUT DATA FOR BT - METRIC

NO.	DEPTH	TEMP
1	0.0	28.3
2	10.0	27.9
3	20.0	27.8
4	30.0	23.8
5	50.0	21.5
6	75.0	19.9
7	100.0	19.1
8	125.0	18.7
9	150.0	18.3
10	200.0	17.8
11	250.0	17.7
12	300.0	17.4
13	400.0	16.5
14	500.0	15.1